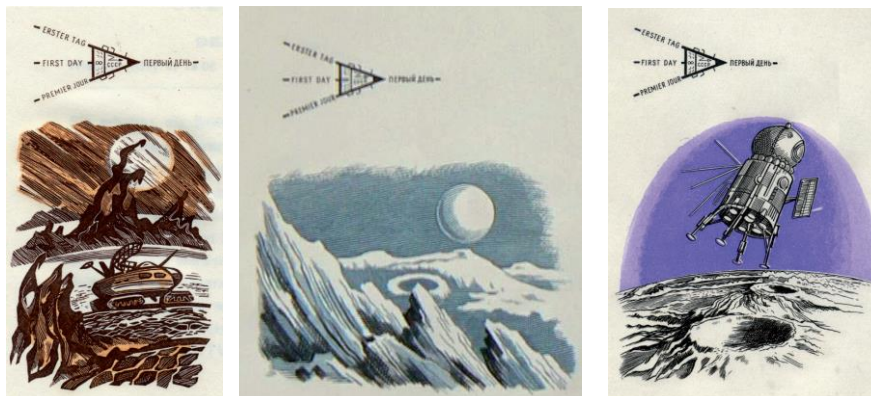


## Voskhod-2: the last dramatic chance to beat the Americans

by Umberto Cavallaro<sup>1</sup>

With the fall of Khrushchev new hopes arise in Korolyov who, together with his staff, prepares a detailed report for Brezhnev and Kosygin. The report explains the state-of-the-art of space programs both in USSR and the US, and bluntly says that the Russians' attempts to reach the Moon are not being conducted with any precise scientific programme, but are carried out only with the ambition to "beat the Americans at any cost." And this criterion cannot be followed anymore because, in the technique of rocket motors and electronic instruments, Americans are now far more advanced. The paper also discloses the story of the preparations of the Voskhod-1 mission that – it is reported – both impresses and horrifies Brezhnev and Kosygin.



*In the mid-60s lunar landscapes increasingly often appear on the Kniga cachets, as to indicate that the Moon is the next target of the Soviet space programme*

The report suggests several proposals and recommends dropping the idea of landing on the Moon, and limiting the research to the activities actually achievable, such as sending automatic probes. It suggests leaving out the pretension of overtaking, in continued emergency, any flight announced by the Americans and recommends addressing the effort to study a suitably powerful rocket-carrier, and to design a project of orbital scientific stations.

These proposals apparently are favourably accepted. Encouraged by their attitude, Korolyov promises to the new "bosses" he will do everything one final time to put one over on the Americans who, with the Gemini programme, have announced plans to release a man in outer space.

He therefore starts to prepare a last flight of the "sphere", and arranges the mission which will be called Voskhod-2.

On the suggestion of Voskresenskij, it is decided not to depressurize the cabin, but to place an airlock between the cockpit and the exit. The preparation is interrupted by his premature death. The years of imprisonment, the ceaseless and exhausting toil, the continuous nervous tension led him to pass away at only 52. Not resigned to the idea of having arrived at the end of his days, he strives to the last, even on the hospital bed.

The death of Voskresenskij hardly affects Korolyov who on his tombstone says that without him it would not have been possible to launch Sputnik before the Americans.

Korolyov, although physically weary himself, is forced to return to work since the day after the funeral of his friend. The Americans have announced they are going to put the first Gemini into orbit.

<sup>1</sup> This article is extracted from pages 85-89 of the book by Umberto Cavallaro, "Propaganda e Pragmatismo in gara per la conquista della Luna" ("Propaganda & Pragmatism in race to the Moon"), Impremix, Turin 2011, 186 pages.

Although there isn't anymore a Khrushchev haunting him with phone calls, in Korolyov is now ingrained the idea of moving heaven and earth to beat the Americans, even just for one day. Even for Voskhod-2 enormous problems of weight must be faced, and Korolyov misses the support of the brilliant Voskresenskij. Reserves of onboard subsistence can still be reduced, but two astronauts with space suits weigh no less than three in jackets. In addition there is the airlock. Alexei Leonov and Pavel Belyayev are selected as the Voskhod-2 crew. The lift-off is planned for March 18<sup>th</sup>, 1965. After the launch, Radio Moscow announces the mission, without providing details. When all is done, breaking news succinctly informs that for the first time a human being has left the spacecraft and freely exited in outer space. No details.



Soviet Post celebrates the new record on March 19, 1965 by issuing an imperforated stamp designed by Lesegri (in Russian Лесегри), the collective name of the team of three Soviet artists and designers of postage stamps (Boris Lebedev, Leonard Sergeyev and Mark Greenberg), who worked in USSR since 1957. They, under the control of the KGB censorship, have to invent a fancy, stylized spaceship, totally different from the real one, which is strictly prohibited to reproduce. A perforated version of this stamp is issued few days later, on March 23<sup>rd</sup>.

Only after the end of the Cold-War and the dissolution of the Soviet Union, would the world know that with this story a tragedy was only just avoided.

After 12 minutes spent in open space, Leonov's space suit balloons from its internal pressure against the vacuum of space, stiffening so much that he is not even able to activate the shutter on his chest-mounted camera and to photograph the Voskhod, nor to retrieve the camera that has immortalized the spacewalk.



On the left: postcard designed by Leonov, who also is a fine artist, and signed by him. On the right: commemorative cover with the imperforated stamp, cancelled with the pictorial red-ink postmark used on March 23<sup>rd</sup> 1965 in the Moscow International Post Office, as indicated in the bottom text line. The Russian text reads "For the first time a man has gone out in the cosmos". On the same day a similar pictorial postmark – with few differences in the design – has been used also in the Moscow Main Post Office, using black ink,



More serious problems arise when Leonov has to re-enter the capsule through the inflatable cloth airlock. In an unplanned way he enters the airlock head-first and gets stuck sideways. With this exertion his body temperature is overheated by 1.8 °C. After many attempts he is exhausted.

At the end he decides to depressurize his suit by opening the valve that discharges the air, with the risk of decompression sickness and embolism.

He confides later that his helmet included a suicide pill to use in the event that things went wrong and Belyayev had been forced to abandon him in space.

It would be almost four years before the Soviets tried another EVA.



*A fixed-date pictorial postmark was used on March 18th, 1966 to commemorate the first anniversary of the launch of Voskhod-2. The text in the external crown reads in Russian "Anniversary of the flight of the sputnik spacecraft Voskhod-2"*

But this is not the last drawback of the mission.

Orbit seventeen repeats what had already happened twice in 1960, during the first test of the Vostok capsule: the braking system, controlled from the ground, does not work. Korolyov orders the pilots to operate it by hand in the eighteenth lap. They can no longer land in southern Russia. All department aircraft stationed in Siberia and in the Arctic area are alerted. Voskhod 2 lands in the dense snow-covered Siberian inhospitable pine forests, and the pilots are harassed by hungry wolves or bears – the story varies by source.

A helicopter sights them after four hours but cannot reach them. They will be rescued only after two days, when it will be possible to deforest two landing point for rescue helicopters. Overall, recovery and transfer of Belyayev and Leonov takes twice as long the duration of the mission in space.

This adventure starts the routine of equipping the crews of the Soyuz with the TP-82 shotgun that will be part of the survival kit crew until its official abolition in 2007 on the occasion of the ISS Expedition 16.

This is the last mission headed by Korolyov and the last prestigious record achieved by the Soviets. For a long time it will be the last manned Soviet space mission.

After the success of Voskhod-2 in fact the Soviets – unexpectedly – suspend all space activities.

But the real tragedy is that Voskhod has sacrificed for the sake of spectacle three critical years that would have served for the development of the new Soyuz spacecraft.



*To commemorate the first anniversary of the flight a pictorial postmark was used on March 18<sup>th</sup> 1966 in 6 different postal facilities throughout the Soviet Union: actually Moscow, Moscow International, Kemerovo, Volgograd, Perm and Vologda. The post-office where the postmark was used is identified just below the date. The external text reads in Russian "Anniversary of the flight of P.Belyayev and A. Leonov in the spacecraft Voskhod-2". Among the most interesting are the cover cancelled in Perm and in Volgograd. Perm, in the Ural mountains, was the rural locality nearest to the landing place (about 75 kilometres, 47 miles) with a small post-office. The inhospitable forest is featured in the cover cachet and the green ink was used for the postmark. This is the first space-related postmark used, during the Soviet Era, in Volgograd which was the largest city near to the Kapustin Yar cosmodrome, at that time still secret.*