

# Russia in Space - An exhibition

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The well-dressed businessman asked the Lufthansa reservations hostess at the Frankfurt Airport, "Which way to the space station?" The hostess smiled and replied, "Go to the entrance of Pier A of Terminal 1 and take the escalator upstairs. Then you will see the signs."

Is this a scene from a hundred years from now? No, the time is now. A full scale mock-up of the core module of Mir is on display at the Frankfurt Airport along with a trove of other Russian space hardware in the fascinating "Russians in Space" exhibit.

This cosmic collection is one of the largest exhibits on the Russian space program ever shown in the West. Over 100 items from the Cosmonautics Museum in Moscow depict the entire history of the Russian space program from the early GIRD experimental liquid fuelled rockets to the International Space Station. The exhibit includes a wide variety of actual hardware, back-ups, models, engineering prototypes, and space suits from the Soviet archives. The exhibit is being produced by East Art & Culture Promotion GmbH with the cooperation of Fraport, the Frankfurt Airport Authority.

For modelers, the exhibit is especially important. Soviet hardware is rarely exhibited outside of Russia, and then for only short periods. Although photos of many Russian spacecraft and probes are available in books and now on the net, the actual size of the hardware is very difficult to grasp until seen in person. It is incredible to see an engineering prototype of Lunakhod, which most resembles a 7-foot bathtub on 8 wheels, since in photos it appears smaller due to the topography.

"Russia in Space" features a large collection of models of many of the launchers and spacecraft. Especially interesting are the large models in 1/50 scale (a scale more common in the Soviet Union) of the launchers for Sputnik, Vostok and Soyuz so that you can examine the evolution of the R-7 launcher. A model in the same scale of the Energia launcher with Buran is displayed along the same wall demonstrating the launcher's relative sizes. The craftsmanship of the models is extremely high. A real marvel is the 1/10 scale model of an early version of Mir with the central core, Kvant and a

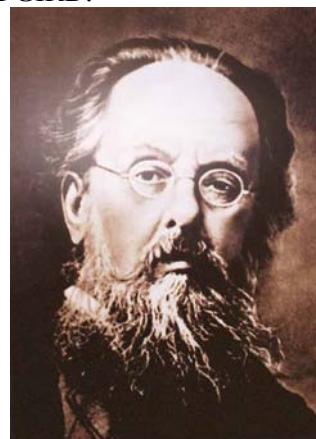
Progress awaiting the docking of a Soyuz. The model is a marvel of Soviet metalworking and is detailed exceptionally well.

The Russian space program unfolds as you walk through Gallery 1, a very long corridor above the main check-in area for Lufthansa departures at the Frankfurt Airport. The exhibit commences with full-scale replicas of GIRD-9, GIRD-10 and the R -07. These were the first experimental liquid fuelled rockets launched in the early 1930's.



GIRD-09 Launched for first time 17 August 1933.

The rockets are appropriately within the gaze of portraits of Konstantin Tsiolkovsky, the father of Russian Cosmonautics, and Sergei Korolev, the Chief Designer of the Soviet Space program, who as a young engineer was an important member of GIRD.



Konstantin Tsiolkovsky

After demonstrating the efforts of the early Soviet rocket pioneers the exhibit features a full-scale replica of Sputnik, the first satellite in space.



Next to it is a very large metal model in 1/3 scale of Vostok with the third stage of the launcher covering the retrorocket module.



All the yards of cabling and piping that covered the equipment module meticulously are reproduced. A bright orange Vostok space suit is displayed along side the capsule.

Another feature is a display about Soviet experimental launches of animals into space. There is a replica of Kosmos 110, which was launched on February 22, 1966, a veritable Noah's ark in space with two dogs, fish, turtles, fish and a wide variety of other biological specimens. Kosmos 110 was launched into an orbit with an apogee of 565 miles so the animals entered into the lower portions of the Van Allen radiation belts. One of the actual life support equipment containers for the dogs is also shown.



The containers furnished a separate pressurized environment for the dogs, as well as providing food, water and connections for biosensors. Kosmos 110 is displayed next to photos of Laika, the first dog in space and Belka and Strelka, which in August 1960 were the first animals to be returned safely from orbit.

A section is devoted to the Soviet unmanned exploration program. The aforementioned size of the Lunakhod is striking. The engineering prototype on display is painted white rather than the actual metal finish. Lunakhod is next to a full size replica of Luna 10, which became the first satellite to orbit the moon and was launched on March 31, 1966. The exhibit, however, does not even mention the ambitious Soviet manned lunar landing program, which was later abandoned.



The Soyuz program, which began in 1967 and which capsule is still used today, thirty five years later to ferry crews to ISS is well represented. This section is lead by a Sokol suit, which is the pressurized space suit worn during launch, re-entry and docking procedures. The Sokol suit was placed on a mannequin that is sitting in one of the couches that are in the Soyuz descent capsule. There is a Forrel suit, which is an orange suit that provides buoyancy in the event that the Soyuz capsule needs to be recovered on water. There are examples of many of the flight suits worn aboard Soyuz and Mir during routine operations.

Since the exhibit follows an historical path, its cornerstone, a full size replica of the core module of Mir, is saved until almost the end. The core module, even without the other parts of Mir is huge. Visitors can experience for themselves life aboard a space station by stepping inside the core module. The interior of the mock-up includes the major features, but naturally does not include the piles of clutter that filled every part of Mir as it flew for 15 years in

space. Around the dining table visitors can try the O g stools which provide a seat, but prevent your legs from floating away. The interior also shows the control area forward of the living area.



Although the core replica is relatively spacious for the few minutes that a visitor is aboard, you can also wonder how is it possible for a cosmonaut like Dr. Valeri Polyakov to spend 437 days aboard Mir setting the record for continuous space flight. Although the view was tremendous, life aboard was very cramped.



Among the final exhibits is an Orlan space suit that was used for EVA's from Mir. Above the Orlan suit is the well-detailed 1/10 scale model of the Mir.

The gallery concludes with an exhibit shop that sells many excellent books about the space program that are difficult to find elsewhere. Among these books is a new reprint of *Sowjetische Raketen (Soviet Rockets)* by Peter Stache and a lavishly illustrated paper back about Thomas Reiter, the German astronaut who spent 179 days aboard Mir in 1996. The shop also sells some surplus Soviet Air Force full and partial pressure suits at reasonable prices that will make great souvenirs.

Although "Russia in Space" presents a well-detailed and comprehensive history of the Russian space program, with excellent hardware

and spectacular models, it does have a few deficiencies. The exhibit too much tends to follow the old official Communist party line about the glories of Soviet space spectaculars. This may be due to almost all of the items being on loan from the Cosmonautics Museum, whose own facility in Moscow concentrates only on the Soviet era. An important omission is the entire Soviet moon program and there aren't models of the N-1, LK lunar lander or the LOK lunar orbiter. Although over \$6 billion was expended on the moon-landing program, according to the official Soviet view the entire program never existed. It was only after the dissolution of the Soviet Union that these extensive efforts were revealed.

Another drawback is that the exhibits are not placed in their proper context in world history. There is very little mention of the Cold War, the American space program or the collapse of the Soviet Union. A more complete picture is needed in the exhibit especially for a casual visitor or someone born during the last twenty-five years.

"Russia in Space", is however a fabulous compilation of the entire Russian space program. Its location right in the Frankfurt Airport is a major advantage. Since Frankfurt is the second busiest airport in Europe, travelers can view the exhibit while connecting between virtually any two European cities. The Frankfurt Airport is also supported by both regional and long distance train links, making it possible for German visitors to reach the exhibit within a few hours. The exhibit is worth a trip from anywhere in Europe, since it is a rare assemblage of artifacts and hardware that are seldom on display.

The exhibit opened on April 13 and will close on June 30, 2002. It is open seven days a week from 9 AM until 7 PM, but special arrangements for visitors arriving on later connections are possible. The exhibit has an admission charge of 9 Euros, which also provides free entrance to the airport's observation deck. There is a web site, [www.russia-in-space.com](http://www.russia-in-space.com), which is mostly in German that was created by the exhibits producers. The web site includes a discount coupon for the entrance fee.

Web address  
<http://www.russia-in-space.com>