

From Salut-6 to the International Space Station: An Interview with Sigmund Jähn

On August 26, 1978 Sigmund Jähn was launched, together with Waleri Bykowski, as the first German cosmonaut in a Soyuz-31 transport vehicle to the Russian earth-orbiting space station Salut-6. He was Spaceman No. 90 on the official cosmonaut/astronaut roster and with his 7-day flight he has inspired all German, human spaceflight activities since.

Jähn made his PhD in 1983, breaking new ground in the fields of remote sensing and earth observation. Since 1990 Dr. Jähn has acted as Consultant for the German Aerospace Center (DLR) as well as for the astronaut Center of the European Space Agency (ESA). In this capacity he was able to prepare and tutor all following German cosmonauts/astronauts for their flights to the Russian MIR Space Station and later for "taxi" flights to the ISS. His own experience, as well his intimate knowledge of all the Russian interfaces, could be capitalized with extreme success for the new generation of German - and ESA cosmonauts (Return on Experience).

Probably the most unique acknowledgement of his success is that Dr. Sigmund Jähn did not only open up the borders to space for Germany but - as an allegoric figure - also opened up the internal German border (the "Wall") for the German unification in the popular German movie Good bye Lenin.

SpaceOps News (SoN) had the rare opportunity to conduct the following e-mail interview with Dr. Jähn:



SoN: Dr. Jähn, the career of a cosmonaut/astronaut is hard to predict. Was there a long term plan for human spaceflight in the German Democratic Republic (DDR)? What were the plans for your "back-up" Eberhard Koellner and how did the plans turn out?

Dr. Jähn: Since 1967 the DDR, represented by the Academy of Sciences, was a member of the Interkosmos program of the former Socialistic States. In the early years the cooperation was limited to participation in various working groups and scientific disciplines - in particular in the fields of hardware development for sensors and other activities for unmanned missions. In 1976 the Soviet government proposed to expand the cooperation to human spaceflight. The selection of candidates and the beginning of the training happened in the same year. After my flight in 1978, several attempts by our Academy of Sciences to participate in an additional flight were made in Moscow. Naturally for such a flight, it would have been E. Koellner's turn. In the meantime, however - in addition to the Interkosmos States cosmonauts from France, India and Syria participated in Soviet flights. At that time, the Bundesrepublik of Germany (BRD) also negotiated possible participation in the human spaceflight program of the Soviet Union on the basis of the Science Cooperation Agreement. Contrary to the Interkosmos States, those Countries paid with foreign currency. Because of the extreme internal financial situation, the DDR was neither willing nor could it pay for a future flight opportunity. Therefore all plans for an additional manned flight had to be stopped. Eberhard Koellner served as an officer in various positions in the Air Force respectively within the association Gesellschaft fuer Sport and Technik of the DDR.



By the way, the above mentioned negotiations with the BRD finally led to an agreement allowing Klaus-Dieter Flade from the German Air Force and Dr. Reinhold Ewald from the German astronaut Corps to start their training at Star City (located close to Moscow) in November 1990 under my tutelage. Klaus Flade's flight took place in March 1992 (to the MIR station).

SoN: You and E. Koellner were selected from a group of 30 pilots. Were there plans for accepting female cosmonaut candidates at any time?

Dr. Jähn: No, the selection was performed from a group of qualified active pilots according to the proposal from the Soviet management. The original group of 30 consisted only of fighter pilots. The goal was to have experienced pilots with academic backgrounds and good command of the Russian language. Female pilots in this category did not exist.

SoN: Who or what inspired you to become a cosmonaut?

Dr. Jähn: Indeed Juri Gagarin did inspire me. He was a pilot, a very sympathetic and obviously intelligent man. Like us he also flew the Fighter MiG-17 at that time. When he and his flight instructor crashed in a MiG15 UTI in 1968, I happened to study at the Military Academy of Monino. It was a matter of respect for me to take part in the official

funeral service in Moscow. However, at that time I had no idea that I myself would have a chance to participate in a space flight with one of the cosmonauts from Gagarin's old school. Later I could fly with Waleri Bykowski, Russian cosmonaut number 5.

SoN: During your flight you had a very tight schedule to observe for scientific and also for PR activities: remote sensing measurements, material science, medical, biological experiments and human stress investigations. How was the ratio of time for scientific experimentation to other duties? Did you have any autonomy for decisions? And did you consider yourself more an Engineer or a Scientist?

Dr. Jähn: An interesting and demanding scientific program was defined by various scientific institutes of the DDR, together with the appropriate institutes in Moscow. This program was basically completed during the stay at the Salut-6 space station. Since our ascent to Soyuz-31, as well as for our return to earth on Soyuz-29, the capsules were manned only by the two of us; we received robust training as capsule engineers as well. On board the space station, I could dedicate most of my time to the execution of the scientific program. For the remote sensing program called BIOSPERE, I had some leeway for making decisions. With respect to the overall scientific challenge, it could be said that it was basically comparable with the program of today's short-term spaceflights. Since I was able to accompany the flights and programs of the German and European astronauts since 1990 up to 2005 I consider myself qualified to make this statement. The reason for pointing this out is because the BRD journalists at that time had the tendency to belittle our spaceflight as being staged as a political spectacle, only. Of course the technical capabilities improved dramatically over the years. We had no PC's and we could not make family calls during Sunday afternoon coffee times. All that is no problem for the ISS astronauts.



S. Jähn and W. Bykowski before liftoff of Soyuz-31 (DLR Nachrichten Nr 105)

SoN: An American study of the living and working conditions on off-shore drilling platforms resulted in three important requirements to be fulfilled for making life endurable in secluded areas: privacy, good food and regular family calls. How was the situation during your flight?

Dr. Jähn: Without doubt this is all true and correct, but the completion of the flight program under the given circumstances is also important. If you can not adapt to certain restrictions, you neither belong on a space station nor on an oil-rig. However, under the known, basic restrictions the situation for the conditions mentioned above has improved substantially over the past years and decades. For example, an astronaut can have a family video conference in regular intervals; you can see each other and talk. Unfortunately, however, touching each other or even kissing is not possible. There is a variety of food available on board, but you have to adapt a different eating style in weightlessness than eating a good meal at home or in a restaurant. I think of utmost importance is the problem of psychological compatibility among the crew, in particular during long-term flights. Of course it is not a new experience that a crew, which can rely on each other blindly, is capable of the highest achievements under very complex circumstances. Naturally, the reverse is also true.

SoN: The Almanac of Soviet Manned Space Flight (Dennis Newkirk) reports that Soyuz- 31 transported approximately 8 pounds of food: fresh onions, garlic, lemons, apples, milk, soup, honey, pork, Bulgarian peppers and ginger bread. Which food was suited best during the flight and how was the food prepared?

Dr. Jähn: Already 30 years ago the food was plenty - and again under the actual circumstances - quite balanced. However, the responsible people for our nutrition program and the medical doctors took great care not to jeopardize the crew or the whole flight with spoiled food. It goes without saying that the Salut-6 crew - which was already over 70 days on board when we arrived, and had to stay for another two months after we left - had a big appetite for fresh food. And we could fulfill their desires in principle with the approval of medical support. I can't remember everything we carried, but peppers, lemons, apples and garlic were definitely provided. Soup was always available, packaged in the well-known tubes. The use of cups for soup wouldn't have made any sense.

SoN: Did you encounter any critical situations during your flight and would you have wanted more ground station contacts? Can you assess what kind of detailed emergency procedures were available on the ground and at what point you would have to rely on your own judgment. For example, during pressure loss or fire?

Dr. Jähn: We had a relatively small problem during the preparation of the station ingress. The hatch of the Salut could not be opened after the pressure compensation and the sending of the appropriate opening command. According to procedure, we referred to the Contingency handbook. Since this could not solve the problem, we both applied joint forces and the hatch opened. One of the O-rings was stuck. However, during this exercise we made the practical experience of weightlessness. We had to struggle for foothold in order to apply our forces successfully.

Our landing afforded extraordinarily little cushion because of the high winds, which prohibited the immediate folding of the landing parachute after touchdown. However, per Russian definition this was not a "hard" landing - hence no anomaly. Of course the Control Center had all kinds of emergency procedures, which we also exercised during our

training. The Russian instructors were very eager to make sure we, the cosmonauts as well as the Ground Personnel, had a profound knowledge of all systems. The tests and examinations were demanding. Anyway, the saying "you can prepare for a thousand possibilities, the one thousand and first case will happen" was always present.

SoN: Looking at pictures of the Salut-6 crew, one might notice that they all have pretty voluminous haircuts (contrary to American astronauts) - is there a certain cosmonaut vanity observable?

Dr. Jähn: I never noticed any vanity of myself nor of most of the Russian cosmonauts. Usually we did first things first, noting that getting a haircut in weightlessness is a complex and time consuming process - and as I can judge - still is. A special system for sucking in the hairs did not exist, and the cut hair should not float around in the cabin. The hair-cutter cosmonaut had to hold the scissors in one hand and a vacuum cleaner in the other. In addition, he had to have a reliable foothold. Since the available time usually was too short to accommodate all requirements - even during the weekends - the hair had to stay longer than usual on the head. The weightlessness helps to improve the look by letting the hair grow in all directions. As a sacrifice you are losing the look of a well groomed male hairdo - unless the floating candidate is bald....

SoN: What were the selection criteria for defining the sequence of participants from the Interkosmos States?

Dr. Jähn: The sequence of flights was decided definitively on highest political level; that means the sequence was based on political motivation. For us - the German cosmonauts - the order of flights was not considered disadvantageous, because we had more time for preparation and also to take advantage of the experience of our predecessors.

SoN: What was the financial scheme for your flight?

Dr. Jähn: As cosmonauts we were not involved in the financial arrangements. The basis of our flight was the Interkosmos program. In this program, no cash contributions were required from the participants. The DDR provided highly appreciated hardware developments and other scientific contributions. As an example, I would like to mention the multispectral camera MKF-6 developed by Carl Zeiss, Jena, a camera with outstanding performance for earth observation at the time. Of course the services for training, accommodation etc. for the cosmonauts from the Interkosmos States provided by the Soviet Union were not free; however, I am unaware of any amounts.

SoN: How was your, the Czechoslovakian and Polish cosmonaut's acceptance into the "club of astronauts" after your successful flight?

Dr. Jähn: I became acquainted with Ulf Merbold in 1985, two years after his first flight. That was in Austria, both attending the celebration of the 85th birthday of the famous German space pioneer Hermann Oberth. I have no recollection of whether Ulf wanted me to join any western oriented club. We had enough discussion subjects anyway. In the same year the foundation of the Association of Space Explorers took place at a location close to Paris. Cosmonauts from the Soviet Union, astronauts from the USA and other countries joined with equal rights. As a representative of the Interkosmos Group, I was selected for the Executive Committee. I can not remember any special treatment or any special conditions. Keep in mind that the initiators of this association were such famous men as Russell Schweikart from the USA and Alexei Leonov from the Soviet Union.

SoN: What do you think about space tourism? Does this look like the future of human spaceflight?

Dr. Jähn: If this would be the sole future of human spaceflight, it would look very miserable. On the other hand, this branch of economic activity is somehow established. It is profitable, so it has chances for the future.

SoN: Do you believe the Russians will achieve a breakthrough with the development of their partially re-usable vehicle Kliper in the space transport business?

Dr. Jähn: Currently the Kliper project is off the table. Although the planned vehicle had some favorable perspectives, it was decided - at least for the medium term future - to modernize the well-proven Soyuz vehicle and make it compatible with the requirements for crew transport to the ISS but also for other destinations. From 2009 onwards, four vehicles will be available, and I am sure that space tourists can also be accommodated.

SoN: Human spaceflight is often questioned; specialized, autonomous robotic probes are equivalent to the scientific performance, yet more cost-efficient and less dangerous for human lives. How would you motivate the new cosmonaut/astronaut generation for their future career?

Dr. Jähn: I don't think that the responsible politicians of the space faring countries - including journalists with a solid scientific/technical background - would in earnest think about discontinuing human spaceflight activities. My reasoning is: everything that can be done by robotic probes or automated vehicles should be done by them. Those machines act according to clever programs created by intelligent human beings. If spontaneous decisions have to be made, the cosmonaut/astronaut is indispensable.

The Moon could serve as an energy source - in whatever form - in the future. In this case, extensive investments, buildings, control and maintenance facilities would be necessary. Could one in earnest assume that all this could happen without the presence of human beings on the Moon? And, having the exploration of Mars in mind, there is another, rather elusive psychological factor: even after 50 more years and another 500 unmanned probes delivering the most accurate scientific data, mankind will not rest - facing a tolerable risk - until a human footprint is left also on this planet.

SoN: Dr. Jähn, SpaceOps News (SoN) would like to thank you very much for this interview.

Note to the reader: The interview was conducted via e-mail, originally in German and translated by SoN (J. Kehr). Some phrases might not completely live up to the original text or to English grammar, but every effort was made to preserve the spirit of the original answers.