

**VALERY VICTOROVITCH RYUMIN**

**April 27, 1998**

Interviewers: Paul Rollins, Rebecca Wright, Mark Davison

Interpreter: Olga Belozerova, TTI

*[recording begins . . .]*

*Ryumin:* Mr. [Oleg S.] Tsygankov was just fulfilling his responsibilities. He is not a key person. But I would like to suggest, and I believe there are several very important people as Mr. Solovyev, he is flight director of Mir station, and Victor Blagov, his deputy.

Mr. [Pavel Mikhailovich] Vorobiev, he is the manager of planning and design, and I'll just try to give you a suggestion of how we can organize and arrange all this.

Also, it would be nice to include Mr. [Boris I.] Sotnikov. He is responsible for safety. He is leader of the safety team.

Also it would be nice to have an interview with General [Yuri Nikolayevich] Glaskov. He is deputy director of the Gagarin Cosmonaut Training Center of Star City.

Also another person is [Valeri Vasilevich] Bogomolov, and he is deputy of IMBP [Institute of Biomedical Problems]. He is deputy of the lead of the Biomedical Institute, biomedical problems, and he was at the beginning of this project and he's still working on it.

Well, I can tell you what would be the easiest way to arrange for you all these interviews prior to the launch of STS-91. Usually our management group comes and visits in Florida. This management group will be in Florida on the 24th, 25th, and 26th of May. It would be nice if you can find them and ask them during this period of time.

Among all these people I name, I would like to add to this list Alexander [Pavlovich] Aleksandrov, but you told me that he has done this already.

Mr. Tsygankov is a very important person as well, but he is not as important as other people. He's a very good person who holds responsibility, and he leads a very important group, but still it's not the key.

I would like to add Mr. [Oleg] Lebedev, and he is the leader of a scientific team. Mr. Lebedev will also travel to Florida and he will be in Florida. All these people will be in Florida, except for Mr. Solovyev. In order to make this story and project better, not unilateral or not very subjective, I would like to suggest for you to talk with all these people. It would be nice if you could take this into consideration and arrange plans for the 24th, 25th, and 26th, provided we have a launch as scheduled on May 29th. On my side, I'll ask them to participate and understand your problems.

*Rollins:* That would be very good. That's your launch, on the 29th?

*Ryumin:* Yes. I will not be among these people because I will be on the quarantine already, but Mr. Sotnikov will be instead of me.

*Wright:* Do you have a suggestion on how we need to contact these people? Is there a main person that we need to go through, to be able to do this at their convenience?

*Ryumin:* Please remind me before those dates, and I'll ask them to participate in your project.

*Rollins:* We will, definitely.

*Ryumin:* But please don't forget to remind me. I need to tell them; otherwise, they might reject it.

*Wright:* We will remind him very soon.

*Ryumin:* And of the Americans, who will participate in this project? I understand Frank [L.] Culbertson [Jr.] and who else? Nygren?

*Wright:* Yes, Rick Nygren and Tom Cremins. Jim Nise. Richard Fullerton. Charlie Brown. Jeff Cardenas. Mike Barratt, Dr. Barratt. As well as our crew members, our astronauts that were in residence on Mir.

*Ryumin:* Charlie [Charles J.] Precourt? [Those] Who stayed on Mir, yes?

*Wright:* Yes.

*Ryumin:* I believe we also can include [James D.] Wetherbee and Charles Precourt. Bill Readdy, Wetherbee, and Charles Precourt.

*Wright:* And we would also like to interview the cosmonauts who interacted with the Mir during the Mir-Shuttle program.

*Ryumin:* It's more difficult, but to try to meet with them during their stay in the U.S.

*Wright:* Yes. And we may not be able to do all, but we would like to do as many as our time and our budget allows us.

*Ryumin:* How long shall we have this [interview] session?

*Wright:* Tell him that's his pleasure.

*Ryumin:* Are you going to broadcast outside, educational programs, through NASA channels or do you plan to do it in a wider way?

*Rollins:* The project as a whole?

*Ryumin:* Yes.

*Rollins:* It's for all the world to know about the Mir-Shuttle project, and so once we gather this data, there are plans to do a book that anybody can buy. We'd like to be able to do things on the Internet and that sort of thing. So, it's something that NASA is doing, but will share with the world.

*Ryumin:* I would like to say why I am asking this. I'm wondering if it's possible to show a piece of this project, with this recording in Russian, for Russian people.

*Rollins:* I was going to ask if there are any plans in Russia to do the same sort of thing, because I think that would be a good exchange of information.

*Ryumin:* Frankly speaking, I don't have time for it, but I agree this will be very useful.

*Rollins:* I didn't mean for you to do it, but some organization similar to NASA.

*Ryumin:* I didn't study such a possibility yet, but maybe I need to talk to the representatives of Star City, and maybe they will be interested in this project. This issue with other people, I don't know what will be their reaction. I believe this will be very useful for Russia, as well, to show such a movie about the space project.

Several years ago, we had a special program on Russian TV. It lasted about thirty minutes, one hour, and the person who was in charge of it, his name is [Vitaly Ivanovich] Sevastyanov, and he was a cosmonaut. It was a very good program. Unfortunately, this program disappeared, and Russian TV doesn't have any program dedicated to space issues. It was like an introduction.

Now one hour left [referring to the interview session]; it's better than two hours.

Unfortunately, we don't have too much time. I hear you have a lot of questions, and if I start giving answers to every question in detail, then we will run out of time, and I would like to suggest you select several questions and I'll respond to them. If I explain all things in detail, then it will take all day, and then we'll be able to drink a lot of--

*Rollins:* Yes, and we look forward to that time. [Laughter]

*Ryumin:* Let me do it spontaneously. I'll start with some issues from the bottom of the list and then I'll go back to the beginning.

*Wright [to the interpreter]:* Tell him we'd like for him to be very comfortable and to speak about what he would like. Frank Culbertson wants us to be able to collect a history of how the participants feel about their participation in the programs, so it's his choice. But please add that we would like to come back, at his convenience, after the mission, to do a follow-up.

*Ryumin:* We'll meet after the flight. There's no escape from it.

*Rollins:* My approach to it is people telling stories, so we make up a list of questions to just show people our interest, but if you have many space stories to tell us, I can sit here for hours and listen to all your stories.

*Ryumin:* Yes, I understand, but unfortunately--

*Rollins:* You don't have time.

*Ryumin:* This first question. For more than thirty years, you have been involved with the space program. Tell us how you began your career. I can tell you that my career started in a common way, as many other Russian people started their lives and careers.

In 1966, I graduated from the Department of Electronics and Computing Technology of the Moscow Forestry and Engineering Institute, as strange as it might sound, and my specialty was spacecraft control systems. After that, I was accepted at RSCE, Bureau of Experimental Machine Building. This is Rocket Space Corporation Energia, how we call today, but before we call this Central Design Bureau of Test Machinery, and the leader of that bureau was Mr. Korolev.

I had to work my way from the low position to the top. I started working at the department which was responsible for ground electrical test engineering. I was responsible for the spacecraft which was destined to fly around the moon, manned flight. We had such a program, and the name of this program was L1. We were planning and it was supposed that two crew members would fly around the moon. It was just a test program which we were preparing to perform, to deliver men up to the moon.

That project wasn't very successful, for two reasons. First, we didn't have enough experience. First of all, I would like to say that we were planning to deliver this spacecraft on orbit and to our target utilizing Proton booster. And now it's one of the most safe boosters, but at the time, it was under still being developed. That's why every three launches had to fail, because we had problems with our Proton booster.

The third launch failed because we had some spacecraft problems. From three or four launches, only one was more or less acceptable. But we had a condition prior to our flight, a manned flight, we've had to perform two successful unmanned flights. We failed to have two in a row. That's why we couldn't fulfill this condition.

At this time, in '68, Americans had their first landing on the moon. Then there was no reason to continue with this program. This program was closed by the end of '69. But by that moment, we got an idea of creating a long-term station. This idea was outlined, more or less, with clarity by the end of '69. One of the key people at the time designing the Mir, Yuri P. Semyonov, now is general designer of the RSC Energia, and he's still working at this position. He was assigned as the lead designer for the first station. He asked me to be this deputy, and since then, since December '69, January '70, I have been working on orbital stations. I was in charge of almost all of the stations except for one, but that station was a military project, and the lead designer of that station was Cellamia, and this was the only one station built for military purposes. All the rest of the stations were just for civil purposes. Mr. Glaskov can tell you a lot about this station. The name of the station was also Salyut, but it has a different purpose and it had different hardware on it.

As far as other projects, I have participated in all of them, first as deputy of Mr. Semyonov, then as cosmonaut. I spent time on Salyut 6 station, then as flight director and deputy of general design for testing. I also started working on the Mir project from the beginning. In '86 I was working as flight director. Then I passed this position to Mr. Solovyev, and since that time, since 1990, he is flight director of Mir station. During all of this time, we had a lot of stories to tell and a lot of situations from which we learned a lot. I'm sure we can talk a lot about that.

I believe that Phase 1 program is very useful and will be very useful for future international space station. During these joint operations during Phase 1 program, we learned a lot. We learned how to understand each other. We got acquainted with the philosophies of each country, and we met a lot of people. I believe it's a very important step for our next second step, which will be ISS [International Space Station].

I believe I am done with the first question.

What about this question at the bottom. Tell us why you wanted to be a shuttle astronaut. Many of the cosmonauts think that, "Okay, I'll do my mission and I'll fly. Once I'm back on the land, I will never fly again." Most of them think like this. But after landing, some time passes and they start thinking, "What about the next flight?" I think the majority thinks like this. Some cosmonauts manage to fly a second time. Some, for some reasons, cannot do it.

As far as for me, after my three flights in the eighties, I was thinking it would be nice to fly for the

fourth time. My situation was like this: people told me just to work for a while and then we'd see. Then I was so busy, life was so hectic, that I stopped thinking about flights. But now we have got a lot of new possibilities and opportunities, and I believe every person who flew, cosmonaut, astronaut, was thinking, "Should I stay here? Why shouldn't I try and fly once again?" And I had the same question. First I had to respond to myself, if I would be able to do it, because since my last flight, seventeen years passed, and I was not in training or in preparation during all these seventeen years. Then the second side of it, the other side of it, did I have a moral right to do this.

As far as the last question, I said to myself, "Yes, I have this right, because I spent all my life, I dedicated all my life to space stations, to the development of space stations, and I have more advantages than cosmonauts who wish to fly to Mir or wish to fly on the shuttle." Also I thought it would be very useful for a person who has very good flight and life experience, to visit the station, the station who was on orbit for more than twelve years. I believe that I will be able to see more details and more things compared to young cosmonauts or crew members. I know that they're very good, they have a lot of knowledge and are well trained, but, still, it was not an easy question for me. But I thought I had a moral right to do it.

But I couldn't answer the other question, because for seventeen years I haven't been trained and prepared for any flights, and I didn't know if I would be able to pass through all this once again, but I decided to try. It was very interesting for myself to prove. First of all, I had to lose 25 kilos [kilograms], pass through all the medical boards, and the requirements on the boards in Russia are more serious and more rigid requirements. Besides, I had to receive approval from my director of management and from RSA [Russian Space Agency]. I managed to do all this, and now one month is left until my flight. If things are going normal, then I believe soon I will fly the shuttle and I will be able, with my own eyes, to see Mir station and inspect what is there. I believe it will be a very, very interesting, good meeting.

I received a lot of requests from my specialist (in respect to space station assembly in order to understand) what is the real status of the space station up (after) twelve years of flight. Training is going pretty well. I enjoy my crew members. Charlie Precourt will be the commander, and this will be his third trip to Mir, and I believe the organization is wonderful. There are three crew members for this flight. Four of them have been on orbit already, and two of them will be new crew members, and I believe this is a very good combination, proportion of new members and people with experience. Let's hope that we will have very successful work in orbit.

*Rollins:* You have a long list of things to do when you're there?

*Ryumin:* I asked my specialist, "What would you like me to do there?" Every day I receive a list of

questions, requests, and they try to state what they would like me to inspect and do there for them.

I believe I responded to the first and to the last questions, and I believe that the rest, we can just meet for today. You have some other questions?

*Rollins:* Yes. I was in sixth grade when I first learned about Sputnik. Do you remember what you were doing when you first heard about Sputnik?

*Ryumin:* I was working at this company which was manufacturing the first Sputnik, the company I mentioned to you at the beginning, that Mr. Korolev was the leader of this company at the time.

I remember Sputnik was launched on the fourth of October of 1957, and at that time I graduated from technical—middle, like secondary college for us, and I graduated from it. I was passing through training at this company. At the time I was just a trainee, a simple person. Besides, all those preparations for the Sputnik launch were done confidentially, and everybody knew that we were dealing with boosters, working on boosters and spacecrafts, but nobody heard about Sputnik. It was just a new notion. First when I learned about Sputnik, that it was launched, I was surprised. Second thought was that this was the company I was working at. No contribution on my side for this Sputnik project, because I was just training at the time, but I was very proud. I was very proud that the company I was working at manufactured the first Sputnik.

Political government, when they learned about this event, they used this Sputnik project for their political purposes, and at that time [Nikita] Khrushchev was our President, and he came and visited with us at the Energia Company and everybody knew what our company was dealing with. Since then, we have received a lot of allowances and a lot of people were rewarded, and the company has always been in privileged position.

When, in 1961, the first man flew into space, at that time I was in the Army. I learned about this news by radio. I was very enthusiastic about it. I never thought that I would be able to find myself and see by myself what all the things about space are.

*Rollins:* That was going to be my question. While this was going on, did you ever think that you would end up spinning around the world like Sputnik?

*Ryumin:* In those times it was like a big fantasy, and I never could imagine that I would have to do this, what I did. I never could dream about it. Now children can dream and they can say, since an early age, "I'm going to be an astronaut" or cosmonaut, but at that time there was not such a profession. People of my generation couldn't dream about it, because they did not know what to dream about at the time.

*Rollins:* You were a tank commander. Do you have this great love of small, confined places, being a tank commander and then being a cosmonaut?

*Ryumin:* [Laughter] It just happened. I never planned to spend time in small volumes like a tank or on orbiting, but it just happened. Except for this time when I was in the tank and on orbit, I used to spend a lot of time with people, surrounded by a lot of people.

*Rollins:* We've certainly enjoyed talking to you today and having you share stories with us.

*Ryumin:* Well, thank you very much. I believe this will be just the beginning for your story. You can add it and provide more details if you arrange interviews with the people I mentioned to you at the beginning. These people, on the Russian side, they were working in parallel and they were partners of people we were talking about on the American side. I am director of this program, but I always base myself on the experience and knowledge of the people. They are a key role, people in the program, and they play the main role in all this. I would like them to participate in this project, and I would like you to interview them if possible. I'm ready to help you to organize these interviews.

*Rollins:* That's one thing that Frank Culbertson has said, is what a team effort this whole project has been, and he stresses that a lot. So we appreciate how you couldn't have done it without your team either. And we want to speak to the entire team.

*Ryumin:* One person that is very important, maybe this person can be very important, but it needs determining. Anybody can be replaced, but the team, the nucleus, determines the program.

*Rollins:* In your career, is there one person that has meant the most to you, either as a hero or as a co-worker?

*Ryumin:* [Tape interruption] People always try to solve. They should not postpone the decision, but they try to resolve the issue. I'm very grateful to all the people who participated in this program, and I consider all the people were very responsible and worked very well.

*Rollins:* Did you help choose them, the team members, or was it because of the jobs that they held already that they were part of the team?

*Ryumin:* At the time we didn't have any teams, any divisions, any leads of the divisions. For sure we had to select people. I tried to find people who had very good business abilities and qualities, and I wanted to



find people with who I would be working very comfortably. With most of them I had been working for more than twenty years, and that's why I didn't have any difficulty in assigning these people. This are not just casual people who just showed up and I assigned them. Those people demonstrated that they can work and they can work very successfully. That's why they were assigned as managers.

*Rollins:* Do these people go on to the International Space Station?

*Ryumin:* For sure. They're working right now for it. We are trying to maintain continuity of all the people who were working successfully on the first phase, will continue working on the second phase, those who will be capable of doing this, taking into consideration their age and their health conditions.

*Rollins:* Will the Mir be abandoned eventually, and what will then happen? Will it crash to the Earth?

*Ryumin:* We are not planning to abandon it.

*Rollins:* Maybe that was a poor term. Go ahead.

*Ryumin:* We are trying to orbit it according to our plan. We need to decide when. It is not clear when we'll do it. It will depend on when we'll have FGB [Functional Group Block] and service module on orbit. These are two key modules of International Space Station. Once FGB and service module are on orbit, then we can start working on Mir deorbiting.

*Rollins:* So it will stay manned until you have your modules on station?

*Ryumin:* I believe we'll not abandon it, because taking into consideration the age of the station, it would be very difficult for it to fly alone, and we'll try to maintain people there as long as possible. The age of the station requires permanent attendance.

*Rollins:* Well, thanks again, for sharing your stories with us.

*Ryumin:* Thank you.

*Rollins:* And what's your favorite beer? I always ask this question. What's your favorite beer?

*Ryumin:* I don't like beer very much. Not very often.

*Rollins:* Would you please tell him that we look forward to speaking with him after he returns, and once

again we offer our sincere apologies. Thank you for your advice on how to do it better.

*Ryumin:* I believe if you have questions, not very big questions which will not require a lot of time, we will be able to find time and arrange another interview. I believe we'll be able to see once you're done with your work, and I would like to hear what I have told you. I believe Mr. Culbertson knows where I can find you.

*Rollins:* Oh, yes. Tell him we look forward to talking with him soon, for him to schedule the interviews.

*Ryumin:* If the launch is according to schedule, then we will be there. We will have Team Zero meeting, as we used to call it, on the 24th, and I will be there this same day. The rest of the team, except for Mr. Solovyev, will be in Florida on the 22nd or 23rd of May. I believe there will be a Building 2 at KSC [Kennedy Space Center], and it's the next building to ISS building. Just please ask Frank Culbertson for help, and make reservations for one of those rooms, and after that he will just schedule the interviews for thirty minutes for each manager, and you'll have a chance to have your interviews with them. Just for thirty minutes, each of them. Very easy.

*Rollins:* Thank you.

*Ryumin:* Thank you.

[End of interview]