

LYNDON B. JOHNSON SPACE CENTER

NEWS CENTER

Houston, Texas

ASTP Press Conference
May 3, 1974

Participants:

Dr. Glynn Lunney, U.S.
Prof. Konstantin Bushuyev, U.S.S.R.
Alex Tatishcheff, Translator

PAO Good morning. We're ready to begin this news conference. Today we have the heads of the Soviet and American delegations for the Apollo/Soyuz Test Project, the technical directors of the project. Meetings have been going on here for the past 3 weeks, and they're here today to report to you on the progress of these meetings. We have a joint communiqué that, if it has not yet, then will be distributed among you now. The technical directors and the heads of the delegations are Dr. Glynn Lunney for the United States and Professor Konstantin Bushyev for the Soviet Union. In between the two technical directors is our interpreter, Mr. Alex Tatishcheff. Dr. Lunney.

LUNNEY Good morning, ladies and gentlemen. We are wrapping up the final stages of a meeting which has gone on for 3 weeks. Indeed, some of the men who participated in the meeting were here since January, so they've been here about 3-1/2 months. And we had the largest group of visitors in a delegation that we have had so far in this work. We have 14 months to go to the flight, approximately, and we have a pretty fair schedule laid out in detail for the work that remains to be done, both internally in each country and jointly in the working groups. The meeting started here April 8th. The purpose of the meeting was to really continue the technical discussions and planning for the joint flight and to be sure that all of the equipments and plans were in order for the mission next July. I think I should characterize the work by saying that we were mostly filling out the plans that had already been laid. We continued some training sessions, and we were able to understand the results of several important test activities that had gone on. We had essentially membership from all five working groups. We had the mission planning and operations working group, number 1; the control and guidance group, number 2; mechanical design, which takes care of the docking system, number 3; communications and tracking, number 4, and the members of the communications and tracking group are - is the area where we have had the people here for some 3-1/2 months in the testing that we've been doing. We also had some work in the life support and crew transfer area. We've scheduled our next major meeting in September, although there will be plenty of activity this summer, with people both in - our people in the Soviet Union and members of the Soviet team here in the United States. We have scheduled some specific time for the flight crew training of our astronauts this summer. They'll be going over to start training on the 23d of June for about a 3-week period. And in the United States - the cosmonauts will be back over here in the second week of September, at the same time as the rest of the working groups would meet in a fairly major meeting in the Soviet Union. We discussed the work that had to be done at the respective launch sites, both by specialists in the radio communications area and in the - and the flight crews themselves. We've scheduled those visits tentatively, and we've been able to take advantage of the meeting schedule that we have to plan on a visit to the Kennedy site with the cosmonauts, probably in February, and a visit to the USSR

launch site in May of 1975. My assessment is that work in the United States is on schedule; the joint work that we do together in the working groups is on schedule. The progress has been good and, indeed, it's been more than good; it's been gratifying. And all of the evidence that we have to date gives us confidence that we will be able to meet the launch time and meet it with a good understanding of what we have to do in the flight and a good confidence in the equipment that has been developed for the flight. With that, I'd like to ask my colleague, Professor Bushuyev, to continue this opening statement to give you a feeling for what has been accomplished here in the last 3 weeks. Konstantin.

BUSHUYEV (Russian)

TRANSLATOR Ladies and gentlemen, Dr. Lunney has told you about the main points of our meeting. I will permit myself to go back a little - a little back over the assessment of the results that we have achieved. We worked for 3 weeks here very intensively and very productively. We looked all - discussed all of the very detailed questions that are before us and made important decisions on a number of complicated technical problems. All of these questions, of course, are related to our joint flight which is planned for July 1975. I must admit that the problems and questions that arise are extremely numerous. And much, much patience and insistence on arriving at a solution is required from all those who participate in this conference. As we have arranged this in the past before our meeting, both sides exchange documents and information relating to what we're going to discuss during the meeting. In addition to that there is a telephone and teletype communication established between myself and Dr. Lunney, and at least twice a month we have what I would like to call a telephone conference. And this permits us to orderly - in an orderly fashion to solve all the problems that come up between meetings. Such a system of preparing for the meetings allows us to meet and discuss a series of - a number of very complicated problems during the short period of the meeting. Dr. Lunney mentioned some of them; I would like to add the following to them. We are - always have and are continuing to give considerable attention to the questions of flight - safety of the flight. At this meeting we did a great deal to - a great deal of work to assess the safety of the systems - control systems. And we also drafted and discussed a report on the assessment of the manufacturing - safety of manufacturing processes. All these are important questions that are part of the whole complex system - complicated system of problems of flight safety. We also discussed in great detail the program of scientific experiments. Each of the five scientific experiments that will be conducted during the flight was discussed in detail and appropriate documents prepared describing - for each of these experiments. And we also prepared and agreed a schedule for the - schedule for the conduct of the experiments. We also discussed the - what we call the flight - joint flight readiness review. We decided to

conduct such a review in May of 1975. At that time we will have to study very carefully all of the aspects of the preparation for the flight and, after a careful analysis of all the factors involved, come to a conclusion as to the readiness - as to the - whether we are ready to conduct the flight. We were once again privileged to become acquainted with the United States laboratory for testing communication - communication links and also with the tests conducted in connection with the life support systems. The directors at this meeting carefully reviewed all of the schedules for completion of our work, and we came to the conclusion that our work is proceeding on schedule successfully, in accordance with the plans which we laid out in the past. Both sides are achieve - completing successfully their responsibilities in this way. I especially wanted to note the successful conduct of an important part of our work, and that is the tests that we conduct in connection with it. During the period between our last meeting and the beginning of this one, some very important tests were conducted. First of all, the final tests and verification of our docking module - docking assembly, sorry. This work was done jointly by both sides here in Houston on a dynamic test stand, and the joint work continued here in Houston for more than 3 months. And I can tell you with pleasure that the docking assemblies which were jointly developed by the Soviet and American sides successfully went through and finished all of the tests to which they were subjected. Also, a great deal of work was done on the compatibility of radio communication systems. This work was finished only at the beginning of April and also lasted 3 months. The conclusions we came to as a result of this work were very satisfactory. Finally, there were joint tests involving the participation of both American and Soviet members of the delegations on the safety of life support systems. The life support systems Soyuz were - the tests took place in Moscow and those for Apollo here in Houston. I repeat again, both American and Soviet specialists participated in these tests. The tests were successful and both sides are exceedingly gratified with the results. At this meeting - this particular meeting, both directors carefully considered and planned a series of meetings in the future, that is, meetings of the working groups, plans for training - for crew training, and training of the personnel that will be in the ground stations. As Dr. Lunney told you already, this year in June/July will be - will take place the training of the crews in Moscow, and in September the same thing will take place here in Houston - both crews. The first - next big plenary meeting of all working groups will take place in September in Moscow. In conclusion, I would like to express my assurance that the condition of the work as of today - the status of our work as of today is such that there can be no longer any doubt that we will be successful in preparing for and achieving our joint flight in July 1975 as scheduled. I would also like to thank all those who are in charge of this Johnson - Lyndon B. Johnson Space Center for the wonderful way in which they prepared the ground for our meeting here. All conditions for a fruitful session were created for us here, as well as planning for our recreation during the short periods of rest - of recreation which we had. Thank you for your attention.

PAO We're ready for questions now. Jim Maloney. Yes, here comes the mike.

MALONEY Two-part question for Professor Bushuyev. One, I've always wondered the reason for the secrecy of the Russian Manned Space Flight Program; and secondly, after these relatively open discussions in this country and in Russia, I wondered if the Russian officials have reached the point that they would permit Americans to review the Russian launch in '75.

TRANSLATOR (Russian)

BUSHUYEV (Russian)

TRANSLATOR At the present time we are examining, studying, and discussing in great detail the entire plan of informing the public of the - of the various details of our flight during the flight. And the detailed information on all of the preparations for the flight will be channeled through a press center. There are no provisions being made for the presence of any members of the press actually - at the actual stop - launch, I mean, launch.

MALONEY I didn't ask, actually, whether the press would be there; I said any Americans.

TRANSLATOR (Russian)

BUSHUYEV (Russian)

TRANSLATOR In accordance with our agreement, American specialists will participate in the preparation of the flight vehicle at the launch site. That has to do with the preparation of all of the compatible equipment. The - the presence and the work of American specialists at the launch site in our country will be fully in accordance with the needs dictated by the - this joint flight.

LUNNEY And to finish that up, Jim, at this point we have not defined any technical need to have people standing at the launch site at the time of lift-off. We have agreed that the people will be in the control center. And as I have said here a number of times, that's really the only place to be once the vehicle clears the pad.

QUERY Will there be Russians at Cape Kennedy when we launch?

LUNNEY No, we don't have any plans for that.

QUERY Professor, you stated that details of the flight will be channeled through a press center - -

TRANSLATOR (Russian)

QUERY In - what form will these details take? Will it be live air-to-ground, periodic printed releases, or what exactly?

TRANSLATOR (Russian)

BUSHUYEV (Russian)

TRANSLATOR I have already told you that the plan for informing - the public information plan for the preparation of the flight and during the flight itself is in the process of being drafted and agreed at the present moment.

SPEAKER What we have in mind that the press center will receive from the flight control centers directly very detailed and numerous reports during the period of preparation and - for the flight and the flight itself.

PAO Abby (garble).

QUERY How are the joint communications going to be done with the two mission control centers, and what did you find out in these recent tests for the communication of the - for the tests in the communication - compatibility of communications?

TRANSLATOR I didn't get that one, sorry.

QUERY For Professor Bushuyev and also for Glynn Lunney: How exactly are these communications going to take place during the flight? and in the recent tests that you've had on the compatibility of communications, what things did you find out and what changes did you make?

TRANSLATOR You mean between the centers? (Russian)

LUNNEY Well, why don't I take one of them. I'll talk about the compatibility tests that we just did. The tests were very extensive and very detailed, over about a 3-month period. I think they were probably the kind of tests that we engineers and managers would be most happy with in that all of the design parameters and all of the equipment worked very well and really up to our expectations. However, also - it's also nice to know that the test indeed did serve its purpose because we found a number of things - a handful, I can't recall them all, but there were five or six things we found that it was good for us to find at this early stage. For example, we found that the volume control on the Soyuz audio panel cannot be at full - full open, or at full volume at the time that we are trying to acquire the VHF ranging. We have not yet reached

a conclusion on that as to whether we will actually modify the audio panel in the Soyuz or whether by procedures we would turn the volume down at the time that we're trying to acquire the ranging. We haven't decided which one of those is the proper solution yet, but we shortly will. Interestingly enough, though, although it's a relatively simple problem, it might have been difficult for us to sort that out. It probably - might have been impossible for us to sort that out if that problem had occurred in flight and we didn't have this test experience. There were a couple of other minor things; we found out how the speaker box was going to work because we had tapes of the - tape recordings of the noise levels in respect to spacecraft, and we have a better idea of how we're going to be able to use the speaker boxes and in what modes of communications we had best use them. There were some other detailed electrician kind of things having to do with ohms and impedances into headsets that I won't bore you with, but on the whole there were maybe five or six of those. And I think the VHF ranging was probably the most significant finding that we - that we came across during the course of the testing. Relative to the first part of the question, and that is the communications between control centers, perhaps I'll let Konstantin respond to that since we just reviewed that and signed a document covering the communication links we would have.

• SPEAKER (Russian)

TRANSLATOR I would like to say that we give a great deal of time to problems of communication from space to ground station and between the Soviet and American control - flight control centers as being one of the most important factors in this whole joint flight. The communication system presupposes that we will be examining this very problem of communication between the two centers in great detail. There will be a direct teletype and telephone linked between the two ground control centers, as well as between the directors of the project. I'll repeat again that everything will be done so that we can effectively and efficiently communicate with each other in case of need in order to assure the safety of the flight. Based on these considerations, we have made - taken a decision recently to utilize in our communication system the American communication satellite, which widens the volume of information that can be exchanged on - communicated between the two countries, including an effective and efficient way of communicating with the spacecraft in the course of the flight.

PAO Paul (garble).

QUERY Dr. Lunney, will we receive the voice downlink from both vehicles when it's available to the ground throughout the flight?

LUNNEY We have made communication plans to be able to relay the air-to-ground and air-to-air that exists in each country to the other side. We have not fully worked out yet whether that's full time - whether that line will be open full time or whether it will be open selected time. We've agree in principle that it will be open, certainly, at selected times. I can't recall exactly what they all are, Paul, but they would be called out in a document that would describe the interaction between the two control centers. We're also discussing the desirability of having that line open all the time that the flight is going on; however, we haven't reached final agreement on that particular kind of use of the line yet. But in the communications between control centers, we have two lines called out for the - for the air traffic that each side would receive, this country going to the Soviet Union and vice versa. So two of the nine lines would carry the air-to-ground, or air-to-air as you know it.

SPEAKER Jim Maloney.

MALONEY Professor, I don't understand the objection to having foreigners witness your launch.

TRANSLATOR (Russian)

MALONEY And secondly, will there be live television coverage of your launch brought to this country via satellite?

TRANSLATOR (Russian)

SPEAKER (Russian)

TRANSLATOR In the press center, which will include both foreign and other press representatives - -

SPEAKER (Russian)

TRANSLATOR - - will receive all the information at the prepar - launch preparation for the launch and information during the launch itself.

SPEAKER (Russian)

TRANSLATOR That information will be sufficiently full and complete to give you a complete picture of the preparations for the flight and the circumstances of the launch of the vehicle.

QUERY Was that yes or no?

TRANSLATOR (Russian)

SPEAKER (Russian)

TRANSLATOR Yes, the st - the launch will be televised.

SPEAKER (Russian)

TRANSLATOR But as Dr. Lunney has mentioned to you, we are still discussing and have not yet agreed to details of this particular procedure - -

SPEAKER (Russian)

TRANSLATOR Because it is part of the general public information plan.

PAO Louie Alexander.

ALEXANDER In accordance with that detail schedule that you have worked out, could you tell us approximately when you plan to have the manned Soyuz flight to test out the modifications?

TRANSLATOR (Russian)

SPEAKER (Russian)

TRANSLATOR At our previous press conference, I've already answered that question.

SPEAKER (Russian)

TRANSLATOR In order to verify and check out all of the changes that we are forced to make in our spacecraft Soyuz for this flight -

SPEAKER (Russian)

TRANSLATOR In connection with the requirements that are - are ours for docking with spacecraft Apollo -

SPEAKER (Russian)

TRANSLATOR We have planned not only very extensive ground tests but also tests of the flight vehicle.

SPEAKER (Russian)

TRANSLATOR And such flights for the purpose of testing these various changes will be made and - including a flight that will be made this year.

PAO Did you have a question, Abby?

QUERY Professor Bushuyev, did I understand you correctly, that you will use an American satellite to communicate not only with this country but with the spacecraft?

TRANSLATOR (Russian)

SPEAKER (Russian)

TRANSLATOR Yes, the satellite will be - the American satellite will be used in order to obtain information on the flight of both space vehicles.

SPEAKER (Russian)

TRANSLATOR But the direct communication with the satellite will be done through spacecraft Apollo.

LUNNEY Let me expand on that just a little bit, Abby. I believe next month we are planning to launch an advanced-technology-F satellite for a variety of purposes. The advantage of the satellite, of course, is that it's a high-capability communication satellite at synchronous altitude. We have implemented a system whereby we can use the high-gain antenna that you are familiar with from the lunar missions to communicate voice telemetry and television - with some restrictions, but with those kind of capabilities - through the satellite back to ground stations and back to - to our control center. So in effect, it's a tremendous expansion of the normal ground station coverage that we would have. And if all works according to plan, we would end up with coverage on approximately 50 percent of each revolution. And I think - I think what Professor Bushuyev was referring to then is that the voice and the telemetry from the spacecraft and the television holds out the promise for us that indeed both of our control centers can almost be in the cockpit during the course of the joint mission, at least half the revolution; not unlike the kind of coverage that we were able to have when we were on the lunar surface.

QUERY Glynn, I have a vision of - you know, the cosmonauts in our spacecraft and the astronauts in their spacecraft and Deke Slayton speaking Russian and the cosmonauts are speaking English and we have two control centers and two flight controllers. How are we going to sort each other out?

LUNNEY I wasn't worried until you asked the question.

QUERY You ... what?

LUNNEY I wasn't worried until she asked the question. T (?), I would say that - I would say that we have a year to go and I think that the kind of planning that the people in the control center have always been able to do gives me the greatest confidence in the world that it's - that it's going to be handled just the way you like it.

QUERY If a situation arises involving both spacecrafts when they are docked, who has the final decision to say what you do about a situation that arises?

LUNNEY We have said a number of times and we continue to say, after studying the problem a great deal, that really each side has to be responsible for its own spacecraft and its own crew. When the control centers are in contact, of course, they are responsible; when they are out of contact, of course, the commander of the crew is responsible for the safety of his men and the ship that he's in charge of. We have paid special attention to the problems that could occur such that it might not be clear which vehicle had the problem. This work isn't all done yet, but we are approaching it in the same way that we have approached in the past, mission rules in this country. And we have had a number of occasions where we have had joint vehicles - command modules and lunar modules, Geminis and Agenas, etc. - and our approach with the Soviet delegation in working group number one is to address the kind of problems that may be not clear at first blush and to arrive at a set of procedures to isolate the problem and to - and to take the appropriate action. We have done some straightforward things, though, in the planning and in the way we will execute the mission. For example, there will only be one control system active at any given time. So that helps to certainly allow one to focus if there are any problems in that area. That's probably the best example for planning the mission in a way that allows you to know which vehicle is in control.

QUERY Could you give sort of an example of what sort of a not-clear situation? And then what about the situation where you have cosmonauts in the U.S. spacecraft? Who is in control - the U.S., because it's their spacecraft?

LUNNEY Yes.

QUERY Okay, and vice versa.

LUNNEY And the kind of situation where it might not be immediately obvious what was going on was if - and I wouldn't want to - I certainly wouldn't want to make too much of this, because we think this would be unlikely - but if at the time that the modules - that is, the Soyuz and the docking module - were open to each other, if there was a pressurization problem of some kind, it might not be immediately obvious as to where the problem was because you've got the two volumes open to each other. But the idea is to prepare procedures that would isolate that as quickly as possible and then furthermore isolate the problem in the respective modules.

BUSHUYEV (Russian)

TRANSLATOR Professor Bushuyev says he'd like to add something to that.

BUSHUYEV (Russian)

TRANSLATOR That problem does not worry me.

BUSHUYEV (Russian)

TRANSLATOR First of all, as Dr. Lunney said, we've already established -

BUSHUYEV (Russian)

TRANSLATOR That in Apollo and in Soyuz, respectively, it is the commander of that vehicle who is in charge.

BUSHUYEV (Russian)

TRANSLATOR And any problem that arises in connection with the spacecraft Soyuz will be solved or decided by the commander of Soyuz and vice versa for Apollo.

BUSHUYEV (Russian)

TRANSLATOR But, of course, it's natural there may be problems that arise that involve both spacecraft at the same time.

BUSHUYEV (Russian)

TRANSLATOR Our experience in our joint work shows or indicates that no problems will arise as a result of that.

BUSHUYEV (Russian)

TRANSLATOR For example, when Dr. Lunney and I decide certain problems, the question of who is in command, he or I, does not arise.

BUSHUYEV (Russian)

TRANSLATOR In both cases, it is the technology that is the deciding factor.

BUSHUYEV (Russian)

TRANSLATOR And we seek a rational solution in connection with the technical means that are at hand.

BUSHUYEV (Russian)

TRANSLATOR Both crews go through a very intensive training -

BUSHUYEV (Russian)

TRANSLATOR (Russian)

BUSHUYEV (Russian)

TRANSLATOR And during the training period, we have planned to go through all of the non-nominal situations that might arise; in other words, emergency situations that might arise.

BUSHUYEV (Russian)

TRANSLATOR And I am quite confident that Astronaut Tom Stafford and Cosmonaut Aleksey Leonov will always together find the proper way to solve a problem -

BUSHUYEV (Russian)

TRANSLATOR And will find it very rapidly -

BUSHUYEV (Russian)

TRANSLATOR Especially taking into account the progress made by Stafford in learning Russian and Leonov in learning English.

QUERY Dr. Lunney, will you be training key interpreters to work with the personnel on the consoles in the flight control room?

LUNNEY Yes, and we are going to take our first steps on that next week.

TRANSLATOR (Russian)

PAO Any further questions? Thank you very much.

#