

ORAL HISTORY TRANSCRIPT

MICHAEL MOTT
INTERVIEWED BY REBECCA WRIGHT
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WRIGHT: Today is April 23, 1999. This oral history session is being conducted with Michael Mott in Houston, Texas, for the Johnson Space Center Oral History Project, by Rebecca Wright, assisted by Summer Bergen and Paul Rollins. Today's subject will be Mr. Mott's involvement with Phase One of the International Space Station.

Thank you for taking time out of your schedule. I know you're very, very busy, especially today. We'd like to begin by you sharing with us how you first became involved with Phase One.

MOTT: Okay. Phase One, my involvement actually started as far back as the Space Station redesign team, and Phase One was an outgrowth of really of the redesign effort. One of the things we were looking for at this particular point—this is now 1993. I was not part of NASA, although I was part of the redesign team. What we were looking for was what was an interim step to the International Space Station from where we were to now in the pure Space Shuttle Program. We actually started out, what can be the Gemini to Apollo, Mercury to Apollo, that we had to do that within the Space Station Program. What came up very rapidly, since we were now partnering with the Russians, is can we use the Mir Space Station to learn better how to live and operate in space, using the Space Station.

WRIGHT: When did you actually become involved with NASA?

MOTT: I became an official card-carrying NASA civil servant on December 28 or 1993, and was actually formally appointed to the associate deputy administrator job. I believe it was announced sometime in early January of '94.

WRIGHT: What were your roles and responsibilities when you first started?

MOTT: My real role as the associate deputy administrator was to function more as a chief of staff, chief operating officer, and really to work with the day-to-day activities across all of the enterprises of NASA and in all of the functional areas. However, human space flight comprises such a large portion of NASA on a proportional basis, my daily activities, a lot of it evolved around Station, Shuttle, and Phase One.

WRIGHT: Did your efforts on the Redesign Committee help you in this new position?

MOTT: A little bit, mainly because the redesign, I had a little better base in where we were really going on Space Station. I had not been involved in Freedom at any point, and so at least I had some idea of the basic design on Space Station, where it was going, how the Russians had become involved, etc.

WRIGHT: What were the goals of Phase One when you became involved with the program?

MOTT: Fundamentally how to operate for long-duration space flight. You know the Shuttle, as a general rule, goes up something like seven to fourteen days. Our entire time, I think, on Skylab had been, what, eighty-nine days, something like that, and we knew that we couldn't operate minute to minute as we do on Shuttle. So how are we going to modify our operating procedures? How are we going to train for long-duration space flight? What can we learn by

a continuous human presence, American human presence up there? Those were the primary objectives.

There were a number of scientific objectives, mostly medical, with regards to humans, but there were some other science conducted, but those were absolutely secondary. I think, in retrospect, the media lost sight of that, but countless occasions, as Dan Goldin would say and we would all say, the science is purely secondary. We are really interested and here to learn how to live and work.

WRIGHT: Can you give us some of the episodes and the events that led to the reality from the idea and how it moved in to working to becoming something successful for NASA?

MOTT: Well, George Abbey, who at that time was a special advisor to the administrator, and still in Washington, D.C., George believed that we needed this interim step, and he was looking for some kind of step to do that. He put together a team, and I don't remember, there were five or six of us. We actually had an early meeting. This was now late '93, I want to say in the September, October time frame. We were working with these same engineers that were working on the redesign. They were still working now, finalizing the Russian involvement and those kinds of activities. So the Mir became prevalent.

But I'd actually have to say I think it was really George's idea. I think George is really the one that deserves the credit. I know that he and Dan were bouncing ideas back and forth, but certainly I think those are the two that really came up with the concept and it really came up to some of the others to figure out how do you make it work. I think that was on one of Dan's very early visits to Russia, and you all have probably got the real dates, but that was probably around November of '93, is my best recollection.

WRIGHT: What did you see as the difficulties of making this program work?

MOTT: I thought we had all the difficulties that you can imagine. We had the obvious technical challenges, which I never felt—I thought they would be easily overcome. I never felt like it was going to be a technical challenge. I thought we had a number of political issues that were going to be difficult. This was the first major involvement with the Russians, really since Apollo-Soyuz, as far as the Space Station Program had been. And a lot of different cultures. We were going to involve a lot of different NASAs—Johnson, Marshall, Kennedy, Stennis, Human Space Flight Centers, and some other roles as well.

We were going to involve all sorts of agencies within the federal government—State Department for sure, obviously NASA. There would be a defense role. Obviously the intelligence agencies were going to get hot and sweaty. The Department of Defense, working within the agencies. The Executive Office of the President, from the Office of Science and Technology Policy, Office of Management and Budget. By now the Space Council was gone, so they were not required. We worked with the Office of the Vice President. National Security Council.

So I don't know how many I've done in the last couple of minutes, but I've probably got to take off my shoes to count them, so I'd say it's a lot of folks, and you've got to coordinate. So I really felt like that was going to be the challenge of really getting through, and I thought we were going to have an internal NASA challenge, and that, in fact, was the case.

WRIGHT: Could you share some of the information about that?

MOTT: The original concept was ten flights, and immediately that got whittled down, I believe, to four, because that was "all the Manifest that they could support." I remember when we were talking about doing this, the Shuttle Manifest is pretty well laid out until we

start Station, so it wasn't like that the Shuttle was sort of parked on the ground with nothing to go do. It had a number of missions. In fact, at this time we'd not even flown the Hubble repair mission, if you remember the first Hubble servicing and repair mission. We still had a number of Space Lab flights to go. So Manifest was blocked.

So the Shuttle Program, shall we say, was not enthusiastic about all of a sudden adding a bunch of flights to the Manifest. So their original number of ten, they wanted to knock down. I think they knocked it down to four. There was some, shall we say, guidance provided, and we increased that to seven, and then I think we ended up with nine. I don't know whether we count Jim Wetherbee's—the first rendezvous. I count it. I don't know how they count that officially as one of the missions or not. But that's about right.

WRIGHT: Was your job involved with the day-to-day activities of all the Shuttle-Mir activities, or were you on the higher level? Tell us how you were involved with the program.

MOTT: I was definitely not involved in the day-to-day activities. I was actually physically [located] and functioned as a part of the Office of the Administrator. There were three individuals up there: the Administrator, Dan Goldin; Acting Deputy Administrator, Jack Dailey, and myself. I became the primary interface between the Office of Space Flight, for a number of reasons, the simplest of which, I had more background in that particular area than either Daley or Dan Goldin. So, consequently, I was just the easiest conduit. So I normally got the first call of anything that was going on, and then in some cases I would say, "That's fine. Proceed," in some cases I'd say, "We need to bring the administrator in. We need to prepare a brief. We need to do this, we need to do that." But I was not involved at all in the day-to-day activities. It was all done either at Headquarters early on or ultimately ended up—well, in fact, Phase One, almost from day one, was managed entirely out of Johnson [Space Center].

WRIGHT: Did some of those first calls include the fire?

MOTT: Yes.

WRIGHT: And the collision?

MOTT: The fire and the collision. My favorite call was the 2 a.m. on the East Coast time that I received that they had abandoned the Space Station, which it turns out was not in regard to either the fire or the depressurization; it was the computer had shut down and they'd actually gone in the Soyuz just to maintain attitude control. It was fundamentally a nonevent, but the report that I had received, the initial report, that they had abandoned the Space Station and were returning to Earth in the Soyuz capsule, which, like I said, turned out to be erroneous.

WRIGHT: Did your duties take you to Russia?

MOTT: They did. I made one of the very early trips in March of 1994, originally planned as a strap-hanger, but the administrator was involved in a bicycle accident, so I went from the strap-hanger role to leading the delegation role, and we conducted meetings with RSA [Russian Space Agency] over a period of about three days, which included Yuri Koptev, Alex Krasnov, and Valery Ryumin were the three principals that we dealt with. We signed the protocol. Most of it dealt with Station. There was about one day, most of one day was Phase One. Myself, George Abbey, Arnold Nicogosian, and Will Trafton were on that trip.

WRIGHT: Was this your first time to Russia?

MOTT: First time to Russia, yes.

WRIGHT: Did you ever return after that?

MOTT: No, have not been back.

WRIGHT: Could you give us a little more detail about that meeting and how it went, since that was your first encounter with the Russians?

MOTT: That was not my first encounter with the Russians. First meeting in Russia.

WRIGHT: Okay.

MOTT: Well, there were some interesting points. If I remember right, we actually flew in and arrived on a Sunday, and the meeting was supposed to start Monday morning. We were scheduled for nine o'clock, and they kept us waiting till about nine-thirty, and I made a very loud announcement, if they didn't meet with us in fifteen minutes, we were leaving, much to the people being appalled all around me. Then lo and behold, fifteen minutes later, the doors magically opened and we were ushering into Yuri's office.

The meetings were very cordial and very professional. I don't think there's any doubt that—I was impressed with their knowledge in the space flight business, that they wanted to be partners in the Space Station. I think there were a few pride issues that we saw, not from Yuri. I think Valeriy Ryumin was one. I think he had some concerns. I felt like he felt it should have been the Russian Space Station, of which we were a partner, or they should have had the lead, if you will. But the meetings were very professional, very cordial, very informative. Like I said, their protocols were signed.

I was a little surprised at the conditions in Russia. This is in '94, and I haven't been back, so I had expected a little more U.S.-like. Maybe it was the time of the year, because March was sort of dingy.

WRIGHT: A short trip.

MOTT: Short trip. I was glad to return to the good old USA.

WRIGHT: You started your career with NASA at a time when the administration had just changed. Do you feel like the effects of working with one President, moving in to a new President, affected the Shuttle-Mir Program in any way, or do you feel support was there from the—

MOTT: No. Let's see. I think the administration would have killed and canceled the Space Station if given the opportunity, and I think that was the reason of the redesign team. You'd have to ask some of the people who were actually in those meetings, but I think the real purpose of the whole redesign was to try to give the administration "an affordable Space Station." In the administration's defense, I think that Freedom, as it was even planned then, was not buildable, but that's certainly one person's opinion.

I don't think the administration was enthusiastically supporting the Station. I don't think they enthusiastically supported the Phase One. I think they viewed it more as a foreign policy initiative than a scientific and technical exploration initiative. They supported us publicly, but I think the record will show—I think the record does show—a very lack of support in financial resources.

WRIGHT: You spent four years with the program.

MOTT: Four years and six months, if I were counting.

WRIGHT: And give us your thoughts on what you believe the benefits the Shuttle-Mir provided for the space program and for the United States.

MOTT: I think the Shuttle-Mir Program was probably the best expenditure of government funds in a long time. We learned more in one year that we were up there than we would have learned in five years. No telling how much we saved ourselves in understanding how to operate, how to train, how to think differently. We suffered two major emergencies, obviously, both with the fire and with the depressurization, which are the two biggest emergencies you ever worry about in space flight. I think that we showed that we had good training from our crew's standpoint. They had good training. They put up with a lot of stress, being able to work the international issues, the communications deal with the media. I think we met every objective ten times over, and for the bargain basement price of probably under 400 million dollars. I don't think we could have gotten that kind of thing anywhere else. It was just a superb program.

I think the Space Station, the day that we operate on Space Station, we will just be years, years ahead of where we'd have been if we had not had the Phase One Program.

WRIGHT: During the time you were there, did you ever have a doubt that it wasn't going to work, that maybe this wasn't the right idea?

MOTT: No, I don't think I ever did. No, I'm sure. I may have [unclear] when they called me at 2 a.m. in the morning and I thought they'd abandoned the station, but even then, you know, I believe that hopefully the United States will lead, but I believe that the world will

eventually get back in the exploration game, and I think it's very key to our roots of fundamental human psyche, if you will, the role of exploration. So in order to explore, you've got to be willing to do risky things. If not, we'd have never moved west of the Mississippi. Somebody's got to have the courage to move out.

I think what we learned on Mir is we learned that we can deal with these risks. We can manage the risk to some extent. We need to understand. We shouldn't go off on a known unknown. We ought to resolve everything that we can, whether it's analytical or engineering or however you do those things. We should go do that, but we shouldn't be timid and not explore. I can tell you that in many of the decisions to go fly, especially after the fire or the depressurization, we got a lot of external help that I thought was absolutely of no value. It was very much based on taking a political survey and asking the public what they thought, and if they thought it was a bad idea, there were people that were willing to scrub the whole thing, which I thought would have been a huge mistake. So I don't think at any time I ever had any doubt. I mean, I never doubted it one bit. I think it was a very well-run program. I think we got a lot for our money. So, no doubts. Long answer. No doubts.

WRIGHT: I'm sure you faced a lot of people that had doubts, especially the time when you had to make the decision whether or not to go ahead and put Dave Wolf on the Mir and bringing Mike Foale home. How were you able to help reassure these folks that was the right thing to do?

MOTT: Well, we tried to present them with the facts. I think within the administration, the administration did not want us to fly Dave Wolf. In fact, I don't think there's any question about that in our meetings at the White House. However, I don't think they were prepared to overrule "NASA," which would have been doubting the administration and ultimately the President overruling the head of an agency, which is a pretty slippery slope to be on. But

there's no question about it, they were not the least bit interested in flying Dave Wolf, and wished that we would have canceled the activity.

I sat there in the meeting and we left with—at least I believe the decision made that we, NASA—the NASA administrator said, "I have decided to fly Dave Wolf." Obviously the President could have overruled him and we would have certainly lived by that, but I don't think they had any intention of "overruling" us, but there was no doubt they would have been very delighted with the administrator at that time if we had not flown Dave. Now, since everything worked out, I think they now can embrace it, but I sat there in the meeting and they didn't want that to happen.

WRIGHT: Speaking of the administrator, Dan Goldin was still relatively new in his job when you moved in.

MOTT: Yes, that's true. He was appointed, took the job on 1 April of '92, and so he'd been there right at two years, two and a half years, when I joined the agency.

WRIGHT: So you were able to help him? How were you able to help him learn more about the Space Station / Mir Projects? Did you have specific duties assigned by him?

MOTT: I had about 150 duties assigned by Dan on a daily basis.

WRIGHT: Added to the ones you had the day before? [Laughter]

MOTT: Added to the ones I had before. He would have specific things that he might want to know more something about, but there are not any that I immediately recall, "Hey, I want you to go off and [unclear] this out on the Mir." Normally, "Get these folks together, get

agreement, get a consensus. Let's make a decision and move on. Come to me. Make a recommendation," that kind of thing.

I think Dan was committed to it from day one. He saw the utility and the value of it. He was under a lot of pressure, but I don't think Dan ever wavered. I think he believed in his heart it was the right thing to do. Clearly he had some anxious moments because it was going to come to rest probably on his shoulders as much as anybody, but I think Dan was very committed, and to this day, especially in hindsight, I think he feels very justified at everything that he did.

WRIGHT: You spent four years, six months, and a few days in this job. Do you have any regrets of moving into it?

MOTT: Oh, no. I wouldn't have traded it for anything. It was a wonderful experience. It was a very honor, privilege, whatever you want to call it, to be able to operate at that level of government. I certainly was able to move in circles that even as I look back on it, I have to find very exciting. You can get caught up in the Washington and the Potomac Fever, but I got to be privileged to be part of a lot of very unique things and on some decisions that I think will make a real difference for America. So I have absolutely no regrets.

I love NASA. I love the agency, I love what they stand for. It was just a time for me, time to look at going to something else. But, no, I think it's a great agency, they've got great folks, they do great things.

WRIGHT: Previously to this NASA job, for some years you had served as a United States Marine Corps aviator. Did you have any personal challenges you had to overcome now that you were sitting across the table from people that you had been trained [to view as] your enemy and now they became partners? How did you address those?

MOTT: I don't think that was ever an issue, never consciously. There was a humorous meeting in Russia when I was across the table with Valeriy Ryumin and he was, shall we say, being a little loud and obnoxious. I turned to the interpreter who was sitting next to me, and in a stage whisper, in my finest English, Southern English, said, "Valeriy looked much better when he had a gun sight on his forehead." Of course, most of the Russians speak very good English, so I'm sure that they all heard me, which was my intent, and the meeting became a lot more cordial at that point than previously.

No, again, I think the Russians always dealt with [us] professionally. If they had a hidden agenda, maybe I was too naive to see it. The engineers were superb. They built great hardware. They've got great experience. There are differences of opinion, but, heck, we can find differences of opinion anywhere. So, no, I don't think that was ever really an issue.

WRIGHT: Although you left, have you been able to keep up with the Station, the impacts of Shuttle-Mir as it's affecting the ISS and moving into its next era?

MOTT: To some extent. I'm with the Boeing Company now, and I do a lot of work with the Station, so I follow it, but very similar to the capacity that I followed with NASA. I'm more on the periphery and the fringes than actually down there in the weeds of the day-to-day-type operations.

WRIGHT: Before we close, I was going to ask Paul or Summer if they had a question for you.

Rollins: Who took your place at Headquarters?

MOTT: The honest answer is, they replaced me with five people. They had now assigned the job to five people and they told me the other day that there are now seven that are doing the duties that I was assigned. I don't know whether that is a compliment or a criticism. But the office is still there.

WRIGHT: Where do you see us going now?

MOTT: Hopefully back to the moon and on to Mars. We need to get back in the exploration game. We need to quit messing around in low Earth orbit, and we need to start today.

WRIGHT: And with all your dealings on Capitol Hill, do you feel that the Shuttle-Mir Phase One Program and early days of ISS have shown Congress that there is a path that's further than what we've gone?

MOTT: I'm not sure about that. I think with Phase One we've shown that we can work with international partners. If you look at the Space Station that's on orbit right now, you have two pieces of flight hardware that were never within 10,000 miles of each other, flown in space, rendezvoused, docked, and the light switch was turned on and everything worked. That is an incredible engineering achievement. Not ever have we done that before in the space program. Every other thing in the space program had always been end-to-end tested on the ground. So that's a remarkable engineering feat.

I think what we have shown is we have the ability to go back to the moon and on to Mars as soon as we get the commitment to go do that, and hopefully that commitment will come soon.

WRIGHT: Anything you would like to add regarding your contributions to this program?

MOTT: No. I was just, like I said, proud to be a part of it. It was a fun time to be with NASA and a fun time to operate with a bunch of great people.

WRIGHT: We thank you. We appreciate it.

MOTT: You're welcome.

[End of interview]