ISAAC W. "CAASI" MOORE

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Wright: It's June 19, 1998. We're talking to Caasi Moore of Phase One Program Office. This is part of the Shuttle-Mir Oral History Project. Rebecca Wright, Carol Butler, and Mark Davison.

Thanks for taking time out of your busy day and your busy schedule. I know that one day just kind of goes into another, and that's why we're here to talk to you. We'd like for you to start by telling us what your current roles are with Phase One.

Moore: Currently I'm a technical manager in the Phase One Program Office with specific emphasis on the operation of long-duration space flight. There are other members in the office that handle mission planning and preparation, logistics, etc. My interface and my expertise has to do with the operations of the spacecraft, the operations of Mir, the operations of the science, and so I've been kind of an interface facilitator between the program office and those people actually out doing the work.

I've been doing this particular role since--gosh, how far back can I go--probably [unclear] was in January 1997. I've been working with them since November of the previous year, but formally detailed to the office in January '97. So I've been working the increments since then, starting with Increment Three, the end of Increment Three, and on to the end of the flights.

Wright: And prior to this, were part of your duties still with Phase One?

Moore: Prior to working in the program office, I was actually one of the working grunts. I had been, again, assigned for mission operations, although not formally detailed--I just kind of hung out--to go work with the Life Sciences Directorate to help them out with long-duration mission operations in TsUP, in the Russian Mission Control Center outside of Moscow. I had been manager of the Mir Operation Support Team, the MOST, as an operations lead for the end of Increment Two and the beginning of Increment Three. That job entailed preparation before the increment started, the increment execution and some after my return from Moscow.

That job was extremely challenging. It was great to lead a good team of people. There were considerable adverse conditions to operate in, a new facility, a new way of doing business. My experience prior to that was not long duration, and therefore I had to learn the nuances and the changes between my previous experience and what it was going to take to run a long-duration mission. All we were concerned about was essentially the payload operations at that time. We had some interest in how the Mir systems were doing, but our job was very much focused on making sure that the U.S. science and the joint science

was executed properly and we got the data back, that the crew member on board was appropriately supported as best we could, and that we maintained a contact between the U.S. and the Russian programs at that point.

I'm not sure exactly where to go from there.

Wright: Well, let's kind of break it down into increments. What were some of the first duties you were involved with from the very beginning? I know Increment Two wasn't Thagard, so that wasn't the first one, but were you on hand for that as well?

Moore: Yes, and prior to my ops lead job and while I was still in the training division, mission operations, I took on some additional duties that got me associated with the Phase One Program. We had flown STS-60 with a Russian cosmonaut on board. We had flown 63, and during another job while I was in the control center, I happened to be in the control center working a Shuttle flight at the same time that Norm [Norman] Thagard docked with Mir. So that was the NASA One Increment start.

Then during STS-71-74, I began working as a Groundhog, which was a console position title that we had. Actually what we were doing, we were essentially assistants to the Moscow consulting group, the group of Russian engineers, flight control engineers, that come to the control center and work in our control center during a joint mission. We have their representatives with us. We find it very beneficial to assign U.S. personnel to this group to facilitate their operations, just not only getting in and getting out, getting in touch with the right people when they have a question, facilitating people getting to them to ask them questions about Mir operations.

So while this is a back-room position and relatively low key, it was extremely fascinating to work with the Russians even in this regard in our own control center and our own environment, trying to educate them as to what to expect and where to look and what to do, at the same time listening to them and to their interaction with our flight control team. So groundhog is a back-room position for the Russian Interface Officer position, RIO, and I worked that for a couple of flights. That's essentially my first formal involvement with the program.

In that same time frame, we had, as we were gearing up for operations in Star City, had assigned a crew member to be the Director of Operations, Russia, the DOR, in Star City. They determined that the DOR needed a deputy. That tour was going to be long and hard, up to a year living in Star City. At that time no provisions were made for taking your family, and after a long and hard discussion, I went and interviewed for that job. Didn't get it; some other highly qualified people did. But I began to try to play actively into the Phase One Program.

It seemed that the direction that NASA would be going in the next ten, fifteen years would be international involvement, long-duration space flight, this was going to be a key step in that regard, and that I needed to get educated and get involved, and so I began playing into opportunities that were presented to me relative to options and how to get involved. That was the [Phase 1 Program] Increment One involvement.

As we were selected to be operations leads and we learned from Increment One with Norm that we needed more expertise in Moscow, not because they were short on technical expertise, but they were short on operations experience, the familiarity with having to make a decision, even if it's not a perfect decision, go on with it and have this ops team move from day to day and actually get operations done, the science folks that were doing that for Increment One had a very difficult time with it because they didn't have people with real time, what we call real-time operations experience in this regard. They had always supported the life sciences missions and back-room positions, but they'd always been behind some other operations leader, which kind of kept the ball rolling. But when they went over to support Increment One, they were a little lacking in that regard.

So, after increment One and from debriefs with Norm, we said we need to get some more people involved in the TsUP, we need some more NASA presence in the TsUP. So they went out to interview for operations lead position. This was to be a NASA position. So after not making it into the deputy DOR position in Star City, this job looked a little easier. It was going to be shorter and still be involved in the long-duration space flight and getting my fingers firmly entrenched in that regard. So I and a number of my cohorts interviewed for the operations lead job, and there were five of us selected in the initial group. It dropped down to four soon thereafter, but there were five of us selected: Bill Gerstenmaier and myself, Tony Sang, Keith Zimmerman, Tim Baum.

We went off trying to figure out what an ops lead job was going to be, what it needed to be, and how to improve the situation. We didn't want to make it worse by our involvement, and we definitely thought we could help move things along. It was a very diverse group of operations leads. Bill Gerstenmaier had been a manager in MOD, with considerable experience in Shuttle operations and real-time operations on the floor. I had been involved in the training division for fifteen or so years, always involved in simulated real time and training, but never having a real-time console position out front. Tim Baum had been working in the payloads area for Shuttle and had been a payload lead for, I think, a couple of flights, maybe more. Tony Sang had been involved in the Space Station world, I believe Space Station Freedom, but hadn't had any foreign experience. Keith Zimmerman had been a back-room support for the flight activities officer, so he had some real-time experience but not out front.

So we had all this diverse background, and we needed to come together and each be able to

perform this job in a somewhat consistent and improving manner. Bill got the first increment, Increment Two for Shannon [Lucid]. The original intent for increment support was we would always have two operations leads in the country. We would have the lead who owned the increment, owned the performance, and he would have a back-up, someone to work the alternate shift to facilitate. Bill was going to be that, the Increment Two lead with a back-up, and there was a rotating schedule for the rest of us to go in and rotate through and support Bill.

Then I was picked to do Increment Three, and I would always have a back-up in country. Tim Baum was going to be Increment Four. I don't remember whether Keith or Tony was Increment Five or Increment Six; it kind of got all fouled up in the end. But we had an operations concept where there would be two of us in country.

Bill went off to learn Increment Two, and the rest of us went off trying to learn Russian. Bill never really got a chance to learn the Russian language, so he was off trying to blaze a trail for us all to follow. During the time frame where he spent considerable time in Russian working agreements with the Russians, working some of the science, actually working operations for Mir 20 before his increment--excuse me. I can't remember. Was it the Mir 19? Yes. Excuse me. It was end of Mir 18, Mir 19--it was Mir 19, I guess, where he was first involved. I didn't get the dates here right, because we went into December. No, I guess it was all in Mir 20. Because we had some science being executed on the Mir 20 flight, which was also a long-duration, a European space flight. So he was involved with getting his feet wet with Russian operations at that time.

While he was going off and getting his feet wet, we ended up with a change in plan. The change in plan was, "Gee, we don't have enough money to send two of you over there all the time, so we're going to pull you back, and there's only going to be one of you, and we'll occasionally send over some support." Instead of us being two to help with the team, there was one with an occasional second ops lead, and that was kind of a sad decision, because as we were trying to ensure carry-over from group to group and trying to minimize the amount of relearning we'd have to do for each person restarting, that it really handicapped our ability to transfer knowledge from one ops lead to the other.

So by the end of Bill's increment, I had been over there twice. We had Tony Sang over there once helping out with Bill's--just giving him a little bit of time off, but we hadn't had a lot of time for the operations lead to actually capture the key aspects of what Bill was doing, doing right, and what he had done wrong and knew not to do again, but all his lessons learned. It was very difficult to pick up.

As I saw, both from that side of the ocean and this side of the ocean, that we were going to need to execute increments differently than we started--than we were at that point. Bill was forced to keep a lot of the decision-making and the rationale in his head, one, because he didn't have time to write it down, two, he

didn't have time to communicate it. We weren't there to pick it up, so it was difficult to know what Bill knew and why he did it. So I felt I was going to end up relearning a considerable amount of things that Bill already knew.

I went over before the end of his increment to assist, to start a handover. It was fortuitous; Bill needed to come back before the end of his increment due to personal reasons on two occasions, and I was over there to facilitate that handover. At the same time, I was kind of thrown into the cold shower, because when Bill left, Bill left and took Bill with him, and there was a bit of a gap in his increment execution and what the team knew to do in his absence. So I had already figured out that long term I was going to have to make some changes in how it operated and how information was passed and how to conduct handover briefings, etc., between the two shifts so that information would be more widely available, we'd be less exposed to someone getting injured or sick and having to come back and there being a real hit to the operations over there.

So I began to operate the team in a slightly different manner, having made change in operations in terms of conducting a handover briefing between the two shifts of the day. The operations in the TsUP consisted of two shifts with kind of an overlap in the middle, but there was never a coordinated handover briefing between the two shifts, and they almost operated in isolation from each other. There were a number of times when the ball would be dropped or at least shoved along for a while until Bill would get back and fix it. That wasn't going to work, particularly wasn't going to work for things Bill was doing in his increment and that I was going to have to keep doing in mine. He was going to take a considerable amount of history with him, and it wasn't going to be transferred to the next guys.

So I did a lot of work before the end of Bill's increment and then after the start of mine to try to capture as much of what Bill new, get the individuals on the team operating in a less autonomous, more integrated fashion, making sure that we coordinated not only better within ourselves, but better back to Houston so that we could call in more support, we didn't have to do everything in isolation.

Those changes were unnerving to people who had gotten used to the way Bill was doing business. They also knew that Bill was leaving and therefore Bill wasn't going to be there, so therefore they were nervous. The changes that I instituted to kind of mitigate that were also nerve-wracking because I was calling on people to do more than they had been doing in the past. So it made the start of Increment Three considerably nerve-wracking.

To back up and look at the start of Increment Two, when Bill went over there and we did our first increment with Shannon, they were doing a lot of things for the first time, and Bill had quite a task in front of him to integrate this team of talented individuals, but they weren't really operating as a team when they were over there, and he made a team out of them. But he was only able to take them so far during the

course of his increment in terms of their development on console and what they could do and what the expectations were and to make a lot of things that were seemingly unique into routine. Bill took it as far as he could, and I tried to pick it up from there and tried to advance the team and the operations to the next level so we could be more and more productive.

We also, from Increment Two to Increment Three, had to do something unique on orbit, and that was to hand over a mission from one crew member to the next. We had never done that before. We've always had the Shuttle flight come down, we give the Shuttle back, a few weeks later we put a new crew on the Shuttle and it goes off again. We'd never handed over a mission in progress from one crew member to the next.

So we tried to plan for a smooth transition between Shannon and John. We worked it, we thought. We knew we had some holes. We knew, and we ran into things we didn't consider, and there was considerable--well, it wasn't so much friction as it was uncertainty about what to do next. Shannon, being a scientist, had a way of operating that the team was comfortable with. They would give Shannon procedures that weren't quite complete but they were enough that a scientist could say, "This is what you want done? Okay. I'll go do it." When you turn that around and you give the same type of a procedure to John Blaha, who's a pilot not a scientist, he sees the holes in the procedures and he wonders what's wrong here. And there is something wrong. The procedures that we gave him in many cases weren't entirely correct, but things that Shannon was able to make do, John was having more trouble with because of their background and experience.

And that was another kind of change. Not only did we have to hand over a mission from one crew member to the next, but we had different crew members on board to deal with. Even though we might have the same operations team or, in many ways, the same people on the ground, we didn't have the same people on board so we kind of had to rewrite the book.

That was unnerving, and I think it was unnerving to John, too. He had a very tough two, three, four weeks, the first weeks that he had getting started in his mission, and it was evidenced in the air-to-ground and it was evidenced in the things we were able to get done. We tried to second-guess him in a number of cases, and we second-guessed wrong, and instead of making things better, we made things worse in terms of his loading, in terms of the expectations, and I think that was also kind of hitting between the eyes in those first two weeks, not knowing whether he was being successful or how successful he's being, how he's being perceived, that we didn't do the kind of support that I wish we had. I'm not sure what better we could have done, but I'm sure we could have tried something different. What we tried in many ways didn't work.

But NASA-3 got off, and the mission was pretty rocky due to a number of reasons, some technical,

some personal. I didn't stick it out to the end of Increment Three. There were enough changes going on back here at JSC [Johnson Space Center] with the organization, the ops leads, and expectations, what we wanted the ops leads to do. Couple that with the fact that I was trying to make changes over in Moscow from Increment Two operations with Bill to Increment Three without Bill, this is what we need to do and how we need to handle it from increment to increment to increment to increment, that a number of things were not well accepted back here in Houston. So I gave them the opportunity, and they said, "Sure, let's send over some more help."

So we sent over some additional people to handle the job, and when I came back, they replaced me with seven people, which was kind of fun. It was fun from my perspective; it was very hard on the seven people who went over to do the job that I was doing. They did a pretty good job of picking up the Increment Three and running it through. Again, this was another change to John on orbit, which I don't think he understood at the time. Maybe he did. I'm not sure. But it didn't help things smooth out from a, if you will, start-of-mission jitters to an end-of-mission smooth ending. We kind of installed some jitters along the way just to keep things stirred up, I guess.

But all in all, Increment Three and the Mir 22 mission were very, very dull. I mean, we didn't have a decompression; we didn't have a fire. We had science that was going on; some of it worked and some of it didn't. It was a cake walk compared to the things that came after that.

Wright: Before we get off that, when you were talking about your team members, this was before you came back and seven went, could you give us some of the other duties? You were head of this team. What were the members of your team? What were they doing?

Moore: The Mir Operations Support Team is composed of single people doing a broad-based job. I had a member representing long-duration science. This person was responsible for helping the flow of the time line to make sure that the science that we wanted to conduct during this increment was being scheduled, that we were going to still, by the end of the increment, accomplish what we needed to accomplish. They also were the primary interfaces with the scientists outside of the team, to try to integrate their wants and wishes back into the team. They played a very large role in the--I call it week-to-week time-lining of our long-duration crew member operations, and it was at that time limited almost entirely to science operations. There were very few Mir systems operations that our crew members were doing at that time.

We had a hardware engineer, or payload engineer, who was responsible for the operation of the science hardware and any anomalies that hardware might have and its interfaces into the Mir system: power cooling, whatever. So we had a hardware engineer with us as well. We had a Lockheed-Martin lead who

was the contractor lead on site, and except for the flight surgeon [the biomedical engineer (BME) is also a contractor] and the ops leads, everyone else was a contractor. Most of them worked for Lockheed-Martin, and the BMEs worked for the Krug [a contractor working in support of flight medicine].

We had a flight surgeon, who was the other NASA civil servant in place. The flight surgeon was supplemented by a biomedical engineer so that they would be essentially on alternating shifts, although it didn't quite work out that way, but the idea was to keep a medical personnel in the TsUP during the crew's awake time, make sure that they had somebody available.

Occasionally we had a data person, a data engineer. That position went away pretty quickly. When we needed them, we needed them pretty badly, and when we didn't need them, there was an awful lot of dead time. So that support position essentially evaporated.

This was the composition of the team during Bill's increment. During my increment we added an additional person, a kind of a crew interface person. One of the instructors that had been working with John Blaha here on the ground, we pulled him in to work the air-to-ground com during one of the shifts so that John would have a familiar voice. John was worried about being able to associate with this person on the other side of the microphone, and we said, "Well, it's not cheap, but this is a relatively easy way to bring in somebody that he's more comfortable with." And so we brought in that for my increment, and that stayed there essentially for the duration of Increment Three and disappeared for the subsequent increments.

Public affairs. We had the public affairs point of contact who worked two doors down, but was still a member of the team in handling the U.S. public affairs interfaces to the Russians. That's essentially the composition of the team.

Wright: What was the duration of your team members? How long were they there?

Moore: Well, that rotated, and it went from forty-five-day tours, to thirty tours. The minimum was maybe as small as two weeks, depending on how their rotations or how their vacation schedules were supposed to work out. But generally they were there for one and a half to two months during their tour. So they were rotating out more frequently than the ops leads were intended to.

Wright: You mentioned earlier that when you had applied for the DOR you didn't get it, and then when this opportunity came, you thought you'd apply, and it was going to be for a shorter duration and maybe easier. Now that you were in that position, do you think the DOR would have been easier than what you went through?

Moore: No, different. No, and I don't think it would have been easier, because although depending on

when you became the deputy DOR, because subsequent DORs have been able to take their families over. So, things are different. There's no way to really compare.

The difficulties with living in Star City versus living in Moscow, depending on your lifestyle, one or the other is easier. It depends on what it is you're going to cling to. If you really like walking in the woods and spending time in the snow and solitude, Star City is very easy to handle, but you cut down your options. If you've got to hit the streets and you want to eat dinner out lots, you want some other entertainment, socialization, there's a whole lot more socialization opportunities inside Moscow. So, again, I think it goes back to personalities as to what it is and what your background is.

I have a memo that was written by the flight surgeon during my increment, because he was concerned about the number of hours we were working. He was concerned about us making mistakes on console. We were asking people to essentially run at the limits of their endurance daily, and that we weren't getting sufficient time off to recuperate. Well, you can do this reliably in a short term, but over a long-term aspect your judgment can be impaired and you'll make a silly mistake that will be very costly or you'll make a very important mistake.

So he wrote this thing up, and he, being a single guy, what he wanted to have for time off reflected the fact that, well, you expect people to come over here and do this job, you expect to get qualified people to come over here and do this job, you can't tell them you're going to come over here and beat them to death, because qualified people won't come over here and do this. Well, as a single guy, he occasionally wanted the chance to travel out of Moscow, go up to St. Petersburg for a two-day weekend. That is not an unrealistic request, to have two days off in a week or a month, but he put these things in his memo.

I read this memo, and my family was back here without me and thinking, you know, if I have too much fun over here, I'm dead. So I'm not really interested in the types of things that are motivating him, a single guy, because of my background. It has absolutely nothing to do with whether he is right or wrong or whether I'm right or wrong. What's important to you, just like living in Star City versus living in Moscow, drastically affects whether or not this is hard or easy or what perturbations are important to you.

So I can't really say that the Star City job would have been easier. It would definitely have been easier if I could have taken my family over there. Working in Moscow would have been a little easier having taken my family over there, but due to the work schedule, I'm not sure how much they would have seen me or would have wanted to.

Wright: Was there a typical day which you were ops lead with that increment that you could tell us about or kind of what was the typical schedule?

Moore: Well, it was more like a week. You didn't start a day; you started a week. The way it worked for Bill, and then we changed it, and I have to start somewhere in the time line and describe it and then describe the delta. During Increment Two, and because they were so short-handed, Bill realized that having a lot of handovers from team to team, from shift to shift, was going to induce more mistakes.

So he looked at it and tried to implement a scheme that minimized the amount of times you transferred responsibility for the mission from one group to the next. And what that meant was you had a rolling schedule. One shift would work the morning and get off at three in the afternoon. The evening shift would come in about one. There'd be a handover. The evening shift would work one until ten or eleven at night, get on a van, go back to Moscow, catch a van back at seven o'clock in the morning and come back in and essentially hand over to themselves because there'd be nobody there overnight. So the evening shift on one day was the morning shift on the next day.

Then the crew that had been on the first morning comes in on the second afternoon, there is a handover of sorts between morning and afternoon, then that afternoon shift works the afternoon and the next morning. So there's one handover a day instead of two, and you slept in the middle of your shift. That had some real strengths and it had a couple of real weaknesses, but it was a trade, and it's what Bill could do with the team that he had at the time, and it worked in that environment. But in minimizing the handover, you also minimized the communications between the shifts, so actually there was less opportunity to pass information. So some information didn't get passed, and it got to the point where certain things only happened when certain individuals were there and the other shift was incapable of doing those things until that person got back. And it wasn't just Bill; it was because the handovers didn't occur daily in this manner that there was not as much job-sharing going on.

You can tolerate that for a while and to a certain level, but it's very difficult to come in from the outside of that increment and learn that increment and that operation and then take over for somebody. The handovers were from person to person as you were handing people back and forth across the ocean was more--my perception--was more difficult. So, as you were doing this rotating schedule, you could essentially say the schedule started Monday morning, and you'd do these rotations until you got to Friday night.

On Friday night, that crew would come in and work Saturday, work the entire day Saturday so they would get Sunday off. The crew that worked Friday morning would get Saturday off, come in and work Sunday morning. I don't remember whether they got--anyway, we had it so that you rotated. If you worked Monday morning of one week, you'd end up working Monday afternoon of the second week. So that you were going through this constantly changing scenario, and you got a day and a half off every week. You either got Friday evening and Saturday off or Sunday off and Monday morning, I guess it was. So

you ended up with a day and a half a week, but you were working fifty, fifty-five hours, sometimes plus [unclear] times, and so it was long.

During the week you had to be very diligent about getting your laundry done and getting your shopping done. There wasn't a whole lot of time just to sit around or to write letters or watch the news and try to figure it out in Russian. It was something that, if you want to lose weight, it's a great way to go.

Wright: Great diet plan?

Moore: Because you don't have time to snack. You're always on the move and on your feet, and in order to build up the stamina week after week you have to--I had to establish and exercise plan. Bill already had one. I had to establish an exercise plan where, on the mornings off, I went down to the embassy and used the recreational room, the basketball court, and the swimming pool every other day. I was getting out and doing about an hour and a half, two hours' worth of exercise with thirty minutes' travel time either side, just so I could build up the stamina to keep going. And you could really tell if you missed one of those days. If you missed that exercise period, the next two days were just horrible. Then you could pick it back up again, but you had to do that to keep the blood flow moving that fast. It was hard.

Pat McGinnis writing this memo about--his little informal note to me that we had to be worried about overwork is right on target, had its own bent to it, but his concerns were right on target. We were working people very, very hard. But you didn't really have a day in TsUP; you really had a week. That was your schedule, and once you got started, you were on this train until you got to the end. Maybe on Saturday you had enough energy to go out and do something, and maybe you just needed to do laundry.

Wright: How about your counterparts that were in the TsUP, the Russians? Did you get a chance to know them well while you were there, or were y'all pretty much isolated and doing your own work?

Moore: Well, I would say we were isolated, but we got to know them. The way the TsUP was built, we were intended to stay in one area and to be sufficient, to operate out of this one area. So we didn't go to the working area, if you will, of many of our counterparts. They came to see us. So in some ways we were isolated.

However, early on in the program, we made contact with our other operations personnel. We didn't really have issues that were U.S.-Russian issues; we had issues that were operations versus scientists. Ops guys wanted to get this stuff done, and the scientists wanted to sit there and look at the data for a while. So all our issues were not that we couldn't work with the Russian operations personnel; it's that whether it was a Russian scientist or American scientist, our problems were trying to get them going in order to pull off a

day's worth of execution. So we ganged up that way as our operations counterparts tried to find ways to make our life better and we tried to find ways to make their life better, because it was us against them and it had nothing to do with flags. It had very much to do with the motivation of the people involved. The scientists were, "I've got to look at this. I want to make a better decision." I said, "You've got to make a decision and just stick with it. Just give me one, or I'm going to make one for you." And we did sometimes.

But that's what real-time operations are. So we got to know them from working shoulder to shoulder, but I had no time to spend with them socially. Some of the people that we worked with worked every fourth day. They'd work a day, have two days off, then come back and work the next day. So this was their planning cycle. Others we worked with worked every day for a normal shift, and they did long-term planning. But the folks who actually did the real-time operations were on for twenty-five hours and they were off for two days, came back on for work twenty-five more hours. So we saw multiple shifts of them because we supported every day. But there was not much time for me to get to know these people socially.

Wright: And you came back.

Moore: Yes.

Wright: Talk about that part, after you got back and the seven people went and replaced you. What was your next part of the role?

Moore: I'd learned an awful lot in the handover from Bill and then in the execution of John's first days, and I saw a lot of potential for repeats, that people were going to fall into some of the same traps. I had one or two things that I thought I did right, and there's probably six or seven things I knew we never wanted to do again.

So I took it upon myself that I've got something to say and I need to say it to these people and pass on some lessons learned. I did so in the form of a couple of long-winded e-mail messages that occurred in the November-December time frame to Tony Sang, who was about to start Increment Four. I also did so in terms of a memo that I wrote: "Lessons Learned from My Experiences." I had been sending out summaries of lessons learned by discrete events all during this, but I felt that it was really important that I help train the next guy. I spent fifteen years in the training division, and I knew that it was sometimes hard to learn something the first time, but it was really painful to learn something and realize the guy next to you already knew it, he just didn't bother to tell you.

So I felt it was extremely important, even if somewhat embarrassing, to say, "You need to do this," and, "You don't want to do that, because that doesn't work." So I fired off a few things in the late '96 time frame, specifically in that regard and working with the follow-on ops leads to try to minimize relearning. They were going to learn their own things, more and more things that they were going to learn that I didn't get a chance to. But there were things that they should not have to repeat. With each new crew member we learned one whole new set of data.

Wright: They were all different, all the increments. Is that an easy statement to make?

Moore: Yes, but in much the same way that you can say you shoot a shotgun shell at a target and it scatters and hits the target in all different spots, so each one hit the target but each little pellet took its own path to get there. Flying a scientist--flying Norm up front just as a trailblazer, "Please, Norm, just get through this," then Shannon, as a scientist, and then we shipped her--we flew Priroda [new module] up during her increment, "Here, Shannon, we're going to send you your laboratory. Oh, by the way, it's not there yet. Stand by." Then we sent up John as a pilot, and we gave him science things to do, but he was really interested in Mir as a system and Mir as a vehicle, and so he pushed us in directions that Shannon didn't push. Jerry Linenger was going to go do an EVA. He was pushing us in that direction. We were going to send up the doc who had flown before, and get him out and let him do an EVA in a Russian suit. Mike Foale, another scientist.

Then early on in the program we were going to send Wendy [Lawrence] up, all right, we were going to send another pilot. And then Dave Wolf another doc, and kind of the science bent. So we were sending all these different people with all these different backgrounds, and each one a different personality trait, each one taking different care and feeding for what it is they need to be trained, what it is they need to be happy. And all those things had to be taken into account.

So each time we were stretching to make the envelope big enough to incorporate all these people. Not to mention the care and feeding of the people who were on the ground, because while we think of the time that the crew member spent in Star City getting ready for these missions and the trips to and from, separation from family, and then actually going and executing the mission, we have people that worked on the MOST from Increment Two or before all the way through this last increment, and they had been rotating to and from Moscow constantly through the whole time, their families seeing them go and coming back and being able to take things, being able to adjust to the "you're here," "you're not here." The single folks having to take care of, you know, "Who's going to take care of my apartment? Who's got my cat?" The trouble that they have to deal with and the support structure that they would put together. It was all

very loose. I would have hoped that we could have done better for those people. We learned a lot, and I hope we can continue to capture that because we're going to send more people like that over for ISS.

Wright: I guess so much was going on at the same time, everything had to run parallel, and at the same time you had to anticipate what was going next. It was never a relaxing time at all when you were there? Did anything ever get routine?

Moore: That depends on your perspective. Chaos can be routine. If you practice it often enough, you know, it begins to look familiar. But, yes, over the longest time frames, things could get to be routine. For instance, the preparation for the arrival of the Shuttle flight began with the departure of the Shuttle flight prior, and it had a flow, you know. The crew member got all his gear out and he worked on it, and then over the course of the increment he began to put his gear back away in support of the Shuttle flight. The Shuttle would arrive, and his gear would come across.

If you looked at that as an event that you could see, it got routine, because you knew halfway through the increment you need to have a plan for how you're going to get him back on the Shuttle, and then you had to keep refining it. Where's the stowage? Where's stuff stowed? What's in what bag? And you have to keep refining it on down to the end of the increment. You could kind of get away with it for the first half of that increment, kind of keeping tabs on it, but not being too concerned about it, but halfway through the increment you've got to begin to clamp this down. And so each increment began to get routine if you looked at that aspect of it. If you looked at the aspect of science operations, after an experiment that worked well had been done two or three times, you could consider that operational and routine until it broke, and then your routine was all screwed up.

Some things never worked as we intended them to and were never routine because we were always trying something new to see what is it really going to take to get it done. So the definition of routine, if you consider all those things as routine, that's a routine increment. Things work, things don't work. The Shuttle comes, the Shuttle goes. Progress comes, Progress goes. Soyuz comes, Soyuz goes. Mir goes on. It's routine, and if you can handle that, it's okay. But that's long-duration space flight.

Wright: Many lessons learned. That was something that it sounds like you can attest to.

Moore: Many lessons to learn. Some lessons learned. Some lessons learned by people who are not going to get a chance to use them, and other lessons that could have been learned have been missed and will have to be learned again.

Wright: So what is your job now with the Phase One? You mentioned all the details of it. Can you give

us some examples of what you do as you interface with all these folks?

Moore: Right now we're working on program close-out. [STS-] 91 has landed. Andy's [Thomas] on the ground. He hasn't started his debriefs yet with the groups, but we're getting ready to. The working group that I work with, schedules his post-flight, is responsible for his post-flight. He has a schedule that actually does the detail. We're responsible for the content of what's in that post-flight plan. We've got that content defined. We've got a schedule laid out. It's running. It's in work. It's our job to make sure that debriefs go off, that the documentation of the debriefs is appropriately handled, that we write a final program report. We have a part to play in that and some other program close-out activities, but right now our concentration is on the fact that with no more crew members on board and no more in training to go to Mir, that we need to finish out Andy's increment with his post-flight activities.

We need to support the science that is continuing to go on on-board Mir. Even though we're not there, the cosmonauts are still doing some of that science, and our POSA (Payload Operations Support Area) is still in operation in Building 30. The subset of the MOST team is still in the TsUP working with the Russians while we don't have a crew member on board, and they're working to get that science done, and we're still here representing their needs, to make sure that they aren't forgotten. We need to finish out the science and close it out.

So that's my current set of responsibilities, is still targeted toward making sure the real-time operations occur, and in our translations to Phase Two that we don't pull the rug out from the people that are still trying to finish out Phase One.

Wright: Is there a time in these past few furious years that you felt the highlight of what you were doing, something that you'll always remember, the reason you're glad you were where you were at the time?

Moore: The answer is not, "No, I can't think of one"; it's "I can't think of a discrete event." I mean, this is all kind of an amalgamation put together. I'm very happy to have participated in Phase One. I've learned quite a bit, both about long-duration space flight, how the Russians do work, strengths and weaknesses on our side. So it's been an education process from end to end, and I think it has been for everybody that was involved. Whether they liked it or not, they learned a lot. It's been a great opportunity being involved in the Phase One program.

There were many times in the TsUP, talking about discrete little events, that you'd be very happy that something simple went off so well. Very detailed things, it was difficult to know when they were done, so you never really felt that they were over because your time with the crew was so spotty, you weren't sure all this was getting done just right. So even if it was going great, going very well, the absence of

communications made you bite your nails. That wasn't pleasant, but knowing, seeing little things go off well, seeing somewhat the friendships form-actually, what you see are the alliances form between individuals, and you'll see people join up and fight for something that you wouldn't have thought they would have formed a team and worked together. And that was fun to watch, to see two people that you thought would have been at each other's throats, standing side by side fighting for something. You'd sit back and say, "Just let 'em have it." Geez. They've already overcome the obstacles of getting something done, they both believe in it, get out of their way and let them do it, and that was fun. It occurred on multiple occasions. I can't think of one particular event.

There were a lot of plateaus. There were a few valleys, but there were a lot of plateaus and not one specific thing. It was fun being involved with the end of Shannon's [Lucid] increment, particularly when she was setting her long-duration space flight record for a woman in orbit, because she's a real character and a very level-headed individual for flying around the planet. She was a pleasure to work with, and there were a number of times on air-to-ground when she'd crack a joke, and you'd just sit back and say, "Oh, this is great."

I do have one particular experience with the Russians which set me back, which deserves mention. I don't have the date written down in any of my notes, but I was working in the control center, and I was down on console on com, getting ready for the next pass for the crew members. In the control center they use one of their communications loops, and they just play music on it, background. So you might hear Russian news, and you might hear something else going on on this other communications loop, and people are busy working on the control center and all's fine with the world. You have this big, big console sitting in front of you, so you really can't see the guy in front of you until you get up on the TsUP console. So I'm sitting back here, and I'm hearing "La Macarena" play, the music, just over the headset, and I'm hearing it kind of from speakers, and headsets that have been set down so it's kind of coming from the room.

Then I realize that what I'm hearing is not coming from the voice loop. I mean, the music's there, but some of it's not, and I'm trying to figure out what's going on here. It's a little bit like the twilight zone. I look around, and I look over the console, and most of controllers in the room are doing the Macarena. I didn't have a camera, and I didn't have a camcorder, and I just calmly stood up and looked over, and it was all I could do not to fall out of my chair, because they were singing the Macarena and were doing the Macarena in the control room for Mir. Now, I was trying to imagine that over here in the control center in Houston, and I can't. That's just not a vision that I can do. But here are these people working, they've been working hard, they've worked for months, they've worked for years in here, the Macarena is played, and so they're going along with it, sitting on console. And, you know, you just sit back and go, "There are different things between the cultures." And I tried not to make an international incident by falling out of my

chair.

Wright: I've always heard music is the international language. Maybe it was just proven in your eye.

Moore: Well, and the Beatles are a great one for that, too. But this one particular event was just something that kind of sat me back as being so different, seemingly funny, but maybe not to them, but very funny to me. Because I had worked over here in our control room, I'd worked over here not on a console, but I'd worked in there. I know the decorum. I know what's expected. And this just-it was good to see. I learned from that experience.

Wright: Well, that's good. I'm glad at least you had a light moment to get you through.

Moore: Oh, there were a few, but that one-there wasn't anybody-I didn't have anybody sitting with me that I could have shared it with, another American. I was down there by myself. This was going on. Who do you turn to? You don't do anything. You just sit back and just admire the moment. It was fun.

Wright: I'm glad you were the sole observer. It was worth being on that shift at that moment.

Moore: Well, yes, I guess, but it was-like I said, it was eye-opening to see the difference. It was fun.

Wright: Well, it was an experience I'm sure you'll always remember. And your family, I'm sure they were always glad to see you come home.

Moore: Well, I have to be careful of being sarcastic here. There have been times when my wife has said, "Why don't you go back." But, yes, I think so. I had, I guess, four trips in 1996 to Moscow, short ones, short in our time frame, ten days, two weeks, twenty-one days, then finally seventy-one days, the last one, and trying to get them ready for what could be a four- to six-month stint. I had planned to have them come over toward the end of my increment and have Christmas in Moscow, and I wasn't there to execute that, but they were having to make the adjustments.

It was hard all around. It was hard on my wife. It was hard on my eldest child, who was fourteen, fifteen, now sixteen. She became the second adult for some of the things because she was the second oldest in the group, so some things fell back on here responsibility. That was difficult and unfair to do. The middle child is pretty much bullet-proof.

The youngest, who was four, turning five that year, never understood where I was or what I was doing, and I didn't predict this, and I don't have the interpersonal skills to predict this, but she took it very hard. There were a number of things that kind of showed up having to do with the longest trip. And she

knew that Shannon Lucid was coming home, and there were pictures of Shannon Lucid on TV, the astronaut that I was working with was going to Mir, going to space, and she, at the age of five, turned to my mother and said that she didn't want me going to space. She thought I was going. I'm not going. I'm just far away. She can't associate with that. But she knew. She was trying to put two and two together, and the person that I was working with was going to space, and if I was working with them, I must be with them.

I don't know how you explain to a five-year-old the concept of a wire or radio or what that means to distance. If I'm working with somebody, I've got to be there or I'm not working with them. And she got quiet. She stopped talking for a while, just got really quiet. After some period of time that I was gone, my wife realized that she was drawing pictures and bringing them in and sticking them in my underwear drawer, thinking that I would see them at night, because, you know, you come home at night. So she was trying to communicate with me by leaving pictures in the dresser. So, things were really hard on the youngest.

Her birthday's in June. One year I was out of the country and we didn't celebrate it until after July Fourth. She didn't know it wasn't her birthday yet. She was really confused about it. People would say, "When is your birthday?"

"June 11th," she'd say.

"Oh, how was your birthday?"

"Well, it's not June 11th yet." Because we were trying to keep things going so that I'd be home and we could celebrate her birthday when I got back. So we delayed it a month, which was not real cool, but it's the alternative, I guess. So there were some difficult things associated with the separation. Did a lot to try to mitigate the separation, but it's not only a physical separation, it's also a separation in time, the difference in time zones, that your day starts over there at midnight here.

So, toward the end of my work day, the beginning of their day, there was some time when we could communicate. We were provided with good access to telephones, good phone service, also relatively good access to e-mail so that things that we couldn't handle verbally with the time shifting, we could send a lot of data across the ocean-what to do if, what to do when, "I'd like this to happen," or, "These are my thoughts." I can capture those and put them in an e-mail message and then she could read them whenever she had the time to, and she can stop at the end of her day, which was like two in the morning, and write me kind of a summary, "This is what your family did while you were away." So that helped, in some ways, to keep contact. In some ways it made things harder because you were involved in the day-to-day that you couldn't do anything about.

That's one of the things that John Blaha was talking about, that he had to come to grips with the

fact that he'd stepped off the planet, and whatever happened on the planet, there was not a thing he could do about it. So he finally had to distance himself from the people that he cared about because he couldn't do anything about it. That's a part of the long-duration space flight.

Wright: Did he talk to you about that when you all conversed, when the two of you conversed back and forth, or is that just something that--

Moore: No. It came up post-flight in some of his debriefings, and I heard his comments. We never talked about it so much. I tried to compare his notes to mine, understanding what he was having to deal with, flying with a couple of guys that he hadn't trained with during his increment since they changed out the Mir crew just before launch. So he was having to deal with similar problems, in some ways extremely much more difficult, because he never had the option to say, "Let's get some more support over here. Send me some relief." That was never his option, so he had to come to grips with that change. There was a lot of changes going on back here administratively, which also made things hard, but they went on.

Wright: You've all gotten through it, and now it goes on to the next phase.

Moore: We hope so.

Wright: I imagine you'll be busy until the next phase or in the midst of the next phase. What was that about your organized chaos or continual chaos?

Moore: There's a certain familiarity with chaos. You just don't let it get you down.

Wright: That's right. At least it's never boring.

Moore: No. A couple of other things I thought of when I went through my e-mail.

Wright: Please share.

Moore: I've already discussed the work schedule. I sent a letter to my family, including my sister, and it had to do with traveling in Moscow. This is written after a particular trip to work during an afternoon traffic jam, and I titled it "An Update on Moscow Driving Techniques." I'll just kind of read it. It follows on in the following manner, "An update on the number of driving lanes available on a Russian road. We got stuck in traffic coming out to work today, four lanes going one way all stopped. I thought it was a four-lane road. Next thing, I see a car straddling the curb, buzzing by on the right, most of it on the sidewalk but two wheels in the street. It swerves into the street to get around a parked car, also straddling

the curb, and then back up on the sidewalk. We all laughed. We were in the van at the time, not walking on the sidewalk.

"Next we see a car on the opposite sidewalk, a big Lincoln Town car, also straddling the sidewalk, but backing up at a good rate of speed to get back to an alley that was just in front of us. It whizzes into the alley, followed by a stream of cars, those in front backing down the street and on the sidewalk and some from behind. Our driver follows suit. Okay, now we have a stream of cars whizzing down an alley between apartment buildings. The stream of cars comes to an abrupt stop as we get to the end of the alley, and it's fenced off, seriously fenced off, with a concrete fence, with a three-foot drop to the street. Our driver looks around, finds another cross alley, and takes it, and we restart the stream of cars in another direction.

Okay, now we have a stream of cars, and our van is in the lead. A few more twists and turns, and we get back to the real street. We rejoin the traffic jam one block further on. With this I learn there's six usable lanes in a four-lane Russian road. Moral to the story: Don't play in alleys or walk on sidewalks."

I think I didn't put in there that one of the places we passed through was the middle of a playground with swingsets on one side and a jungle gym on the other, a stream of cars on the way to that fence. So, yes, it's like "pay attention."

I had another experience with a new guy on his first trip to Moscow, and the driving habits of our drivers were getting to him. There are accidents in Moscow, and when there are accidents they're usually serious because there's very little margin. People drive very close, very fast. This young guy was having difficulty being calm in the van. He was nervous. The rest of us were trying to just kind of keep the discussion light, and you don't pay too much attention to it or you will get an ulcer. So he finally has enough of it, and he reaches up to tap the interpreter who's riding with us on the shoulder who's riding next to the driver, and says, "Tell the driver to chill out."

The interpreter looks back at him, and it took me a while to figure out the puzzlement, but he was kind of puzzled. So he reaches over, and he says something to the driver. The driver shrugs his shoulder, reaches over, and turns the air-conditioner down colder.

At that time we said, "You've got to believe that your van is in an impregnable shell. Nothing can come inside this van to hurt you. That's what you've got to believe. You can't believe anything else. It doesn't do any good. You've got to believe you're in an impregnable shell." I was never in a car accident.

Wright: Do you have any more tidbits to share with us out of your stack of goodies?

Moore: I couldn't find them. I couldn't find them. I had a couple about the actual flights over, where I'd

write a summary of what it was like to go through the airports and sit on the airplane and come through Russian immigration for the first time, which is a real shocker. I went over at the end of January before Shannon launched, to work with Bill as he got the team ready for the start of NASA 2. So it was cold. I remember it was cold. It was minus-fifteen degrees Celsius in Red Square. I got out one time to go walk around with a group of folks at Red Square, and I learned that knit stocking caps are the most useless pieces of attire known to man, and that a twenty-dollar rabbit fur cap is worth its weight in gold.

But on that trip over, never having been into Russia before-I've been international, but never to Russia-arriving at the airport, which is an interesting architectural achievement, and then descending down into the bowels of the terminal to be processed through immigration, they have essentially decorated that part of the airport and they've remodeled it some since then, but they had decorated that part of the airport in what you call early American tin can. The ceiling tiles, as you would see here, looked like three-pound coffee cans mounted this way with occasional lights in the top of the can, meaning that there was this stream of light down to the spot, but everything else was dark around it, so there was a light here, light here, light here, light here, light here. It was painted in kind of a dark-I don't know. It was almost like it was finished in dark cherry or mahogany. It was very dark, not shiny appearance, very dark. The whole area was dark and dim, and for the first time you go into Russia through immigration to this dark and dim environment, you wonder what it is that you're going into. But it was a real eye-opening experience.

Things have gotten a lot more user-friendly than they were when I first went over there. It was a whole lot more user-friendly when I went over there than when the first guys went over in support of the Spektr launch and the initial negotiations for the Shuttle-Mir Program. So it just made a real impression on me, getting off the airplane, with a very American bent to the airplane, and descending into Russian culture over the course of about 200 yards.

It was good that I traveled in a group. It was kind of fun to be able to ask questions, "What's this?," and, "What's that?," as opposed to trying to figure it out on your own. That was a very worthwhile activity, but it was kind the first part of a culture shock. I mean, the cold weather was one. Living here in Houston and working in Moscow, my increment was going to be largely centered on the winter months, that I had absolutely no use for the clothing I had in here, in Moscow, minus the blue jeans, because what you needed was totally different. So, on my first couple of trips over there when we got an apartment established that we would operate out of, I began to stash things in the apartment. I bought a coat that I don't need here that I took and left there, bought boots, left them there, a lot of big things it would be difficult to transfer with the airplane, just get them over there once and just think about, "Well, I've gained all this. I'll just abandon them. I don't need to take them back." But essentially I had to go out and buy a whole new wardrobe. I don't snow ski. If I snow skied, if I had some winter sports like that, then I could

have transferred some gloves, some boots, and things like that into this. I had absolutely nothing. So I had to go out and buy, essentially, clothing for middle Canada to add to what I had.

It was a culture shock and a bit of a physical shock, but it was fun. I'd traveled to Europe during high school, at the end of high school, so I had traveled subways and I had traveled where the language is something else, and worked in different monies, always within a group, never solo. So I had some idea as to what all that was to be. A lot of what I was doing would be solo on this trip, so that was another rough experience, but I had some idea going into this what that was going to be like. But you throw some of the Russian culture and their way of doing business on top of it and the length of time, it was a real growth experience.

Wright: Do you have any new favorite food from living in Russian? Maybe it's favorite because you missed it from back here.

Moore: No. A couple of things. The work schedule did not permit-the work schedule plus the things I was trying to do for the next day did not permit me to go out and spend much time eating out. So if I didn't get-we brought food in and I cooked food in the apartments, but I only had two or three places that I ate because I knew I could eat there quickly and get out, go into a submarine sandwich shop or McDonald's or a diner that specializes in Western food, omelets and hamburgers and things like that.

I did not take the opportunity to grow into the Russian cuisine. I wish I had, but our trips to Russia were unique compared to, or different than, the operations for the people who came over just for the short-the docked missions or those in support of Phase Two, just supporting meetings, because they actually had an evening to themselves, and even if one day things ran long over the course of the trip, they had many evenings that they could go off and do things. In the course of a month I wouldn't have as many evenings as they had to go off and try different things. So I came back with a totally different experience, even though I spent more calendar time over there.

We would travel over, over a two-day period, you'd depart on one day and arrive the evening of the second day Moscow time. You'd start work the next day. And because of the way the handovers were, you worked up until the day before you left. The day you left, you had to spend all leaving. So we did not get the same kind of experience that people did supporting either just the short-duration missions when they came over for a Shuttle docked phase or the Phase Two meetings, where they would have their meetings with the Russians in the morning and may have a tag-up in the evening and go off and do something. We never had that much free time. And it was demoralizing to see those people blow in and blow out. The experience they had, it really wasn't available to us, but we knew, both from personal experience and from

just in the wind, management thought that's the way we were operating, too, and there was no real way to show it to them. We got a chance later on to show it to them. I mean, as people came over and sat with us, "Oh, I didn't realize that you were doing all this." But for the longest period of time they thought our experience was like one of these short experiences drawn out over three months. It didn't work out that way. We weren't staffed that way. It was a little demoralizing.

Wright: Did you have to explain to them why it was “Caasi”?

Moore: No. The Russians didn't care.

Wright: I just was wondering if they asked.

Moore: No. In fact, to keep things simple, I signed things with my nickname instead of my given name. I considered it binding, but if I'd signed something else, they wouldn't have known who it was. So I signed with the nickname that I was using in TsUP that they would then associate with approval by the NASA official.

Wright: How is your Russian now?

Moore: Very poor. It was never good. I went over with a crew in April for ten days, and it took me three days to begin to get the Russian back, and I got back maybe 20 or 30 percent of what I had when I left, just in terms of being able to use it and do things quickly. It would take a while. It's not a hard language. A lot of it is cognates. They all sound the same as the American word. It's just the letters are different, and you can converse without being correct. I was never correct in the Russian language, but I was able to get across what I needed to get across. Whenever dealing with technical details that had to be specifically correct in coordination, we always used an interpreter. It was only in joking around or in light conversation that we would attempt to exchange in each other's language, which was fun. It was fun. I had a number of people on the Russian flight control team over there that I have the highest regard for and respect for. We had a relatively good time together, and they were very helpful in us getting our job done.

Wright: I certainly appreciate all that you've shared. I'm going to ask Carol and Mark if they have any questions.

Davison: I just want to ask one question. What was your favorite thing to do in Moscow? I know you said you didn't have much free time, but . . .

Moore: Favorite. The problem with using the term "favorite" is because you imply with that the

opportunity to do it or not do it. You do it because you could and you wanted to. One of the things that I found very important were these trips to the Embassy to work-out and to swim and then to go by the diner and get a big breakfast and go out to TsUP and go to work, and I relied on those so heavily to get me through that evening shift the first day, that morning shift the next day, da-da-da-da-, that it comes under the category of "favorite," but it also came under the category of "required." So there wasn't the opportunity of choice. I developed this because it worked. I got relief from it. I dropped twenty-one pounds in seventy-one days. I got it all back. But--

Wright: Well, that was going to be my next question. How good is the exercise program now?

Moore: I don't know. It's individual. But, you know, I was over there for the work, and I knew that this work was costing us a great deal. I mean, I wasn't over here working with my cohorts on whatever it is they're working on, I wasn't with my family helping out at home or experiencing those things. What I was doing was very, very expensive, so it was very important that I do it to the fullest extent possible, or why am I there? I mean, what a waste.

So I wasn't trying to expand my free time, because that would have been counterproductive. It sure would have been fun, and I could have done some things and experienced-I'd like to go to the Bolshoi. I've never been to the ballet. Okay. I would have liked to go listen to concerts. I would have like to walk around Moscow and see a lot of the history. There are museums that are literally just a few blocks away from the apartment that I never got to. I would have liked to have spent time with one of my cohorts at their *dacha*, and I would have liked to see them with their hair let down. It seemed the hair was never that far up to let down, but I would have like to have a chance just to bum around and relax, and I didn't because that wasn't the reason I was there, and it certainly was costing too much to go off and do this, and if I ever did, I'd be darned if I'm going to tell my family I did it, because forget that, because they're having a hard time. So I guess I feel missed.

But I don't have a thing that you would call a favorite. I expanded by daily activities in a different way to be more productive, and I found comfort and the ability to be more productive as being a justification in itself. So I can't answer the question I think you'd want answered.

Davison: Let me turn it around and maybe make it a little easier for you. What did you miss the most when you were in Russia?

Moore: Well, I know the easy answer. I'm trying to figure out the hard part. I missed the family. I was experiencing a lot of things I wish I could have shared with them, and I'm not sure that they'd have wanted

to share it for the duration, but there were discrete events, there were particular time frames when I thought, gee, how much they would have grown had they been able to be there and say, "Oh, geez. Look at this other culture struggling with their problems, their way."

I end up telling stories that are not mine. I end up telling other people's stories. A gentleman that I worked with, his job was at the embassy working for the Moscow Technical Liaison Office, MTLOS office in the embassy. His family was there. They're an international family. She's Belgian. He had kids. They lived in the same apartment building. So their living and working in Moscow was different. He had an office job with some extended hours. Family was there. They had more like an eight-to-five work day, and the wife had to run an apartment with two little kids.

When walking down the street in Moscow, you don't make eye contact and there's a lot of bumping into each other just because things are so tight. And when you're in the subway, you're mashed flat and people are bumping into you, and that's just the way it is. They're not trying to be rude, and they're not shoving you around, "I've got to get through the door. It's going to close." Nobody's going to put them through the door except them, so they're going to make a path and get through the door. So you have this kind of interpretation of a very separated and isolated society, people not interfacing with each other.

But they've been through a lot, I mean in the last hundred years, and every once in a while it comes out. This lady tells the story that she was trying to get on a trolley bus, electrical bus, and the drivers are notorious for pulling up, opening the doors, counting to three, shutting the doors, and driving off. You're either on or you're off or you're halfway in between. They've got a schedule to keep. She's standing there with the stroller, the two toddlers, her grocery bags. Objective: get on the bus. A crowd of people all trying to get on the bus. Doors open. Mayhem. She has no idea what's going on. Next thing she knows, she's sitting on the bus, her kids are at her side, the stroller is next to her and the groceries are lined up in front of her. The people behind her had scooped up her family and deposited her on the bus, because that's the way you do things. People don't survive in Moscow unless they pull together. Boom! This family needs to get on the bus! Bam!

When you come through immigration at the airport, everybody scrambles off the airplane and gets in this kind of mangled up line to stand behind the yellow line waiting for their turn to go one single file through there. A family will come up and kind of linger around the back side trying to figure out what line to get in. One of the immigration officials, a lady, will come marching out, and you'd think somebody had stolen the Kremlin. They march out. They come over here, and they take the wife by the arm, and they start dragging her off. And they don't drag her forward; they drag her off to the side. And so they're trying to get the kids along and this and that. They drag her up front, and she marches in front of everybody in line, and nobody goes through until that family has gone through immigration. They will not let that

woman with her kids stand in line.

These are not things that you think about as being Russian, but if you think about how hard their life has been and what they had to do to survive World War II, all the troubles, they had to pull together as a community, and the community is there and very tight, but you don't see it except in certain things, where--BOOM!--you'd better get out of the way because there's customs here that you do not want to cross.

This lady tells another story. She's been riding, the family's on the bus. The bus gets to the point where the bus driver is supposed to take a break, so the bus comes to a stop, the bus driver gets off. Everybody has to get off the bus, get on the next bus that's going by, and go on. Well, you're supposed to get another ticket, because your ticket just expired when you got off the bus, but she doesn't. They get on the bus, and it's a very loose system. The bus driver doesn't care whether you've got the ticket or not; the transportation police care. So everybody gets on, and this transportation police person comes over and asks for a ticket. She shows the one that she has from the previous bus. He says, "No. That's not going to do. Get off the bus."

The people in the bus start yelling at the officer and giving him grief for throwing a family off the bus. Never mind that she's blonde, she's not Russian; she doesn't look Russian. They are giving this guy what-for, because that's not what you do in Moscow.

These are just interesting-you know, you think about this, and you think, "This is really strange, and I'm very much among strangers." You are in many cases, and for a guy you definitely are. You could be on the sidewalk and nobody care. But for the family, they have a very strong ethic. And it was interesting to hear these stories and to see some of them take place, particularly when I saw the things in immigration. And you could see the families panic, "What did I do wrong?" because nobody said, "Please let me take you to the front of the line." No! "Gotcha."

Wright: Thanks, Caasi. We appreciate it all.

Moore: I talked too much.

Wright: No, you didn't. It sounds good. I'm sure there's more. If it comes to you, just let us know, and we'll come and get some more. We wish you the best of luck in the next whatever happens, the next chaos.

Moore: It would be nice to have a next chaos.

Wright: Thanks again.

[End of interview]