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ORAL HISTORY 2 TRANSCRIPT

JOHN E. BLAHA
INTERVIEWED BY REBECCA WRIGHT
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WRIGHT: Today is August the 18th, 2006. This oral history session with John Blaha is being conducted for the Johnson Space Center Oral History Project in Houston, Texas. Rebecca Wright is the interviewer, assisted by Sandra Johnson. This interview is a continuation of the oral history that began on December 3rd, 2004.

Thanks again for coming in and taking time to talk with us today. At the end of our last session, we had completed our discussion of STS-29, so we'd like to start today by you telling us about STS-33 that was prepared for launch just eight months after you returned with the STS-29 crew. So tell us how all that came about and how you were able to get ready so quick for your next mission.

BLAHA: Actually, that ended up being easy. So I returned from 29; was starting to train with another crew—that was STS-40—and there was a death in, I believe, June—so I could have it a little off—of Dave [S. David] Griggs, who was the pilot of STS-33. They were four months or so from launching, and so I think the bottom line is I was the current pilot who had just landed, and so I was available as somebody who could just jump in and get going, which is what happened. So I joined Fred [Frederick D.] Gregory and [F.] Story Musgrave and K. T.—Kathy [Kathryn C.] Thornton—and "Sonny" [Manley L.] Carter [Jr.], and it was really a neat crew. So that's what happened. That's how it occurred.

WRIGHT: This mission was different, because it was a classified mission with the Department of Defense [DOD].

BLAHA: That's right. When you say "different," in my view all missions really are 99 percent the same, and there's 1 percent that's different. So to me it wasn't significantly different, even though it was classified and was Department of Defense. I don't know if that makes any sense, but that's true.

WRIGHT: Now, you mentioned that the training part was easy.

BLAHA: Oh yes. Oh, without a doubt. I'm trying to think of a good analogy. If every crew person could do that, they would get on a ramp, because you've just flown, and when you land from any Space Shuttle mission, there are no more trained astronauts than the people who have just landed.

If they turned right around and flew, assigned to another mission with a different on-orbit task, I've always said I think you could have about a month and a half of training, and they could launch. Because the ascent and entry consume so much of the training that you're way up on a stump, and so a few little proficiencies of ascent and entry, and that's how you could do that. So, anyway, I thought maybe it's a better, more efficient way to fly around here. Have about five crews, and you just keep turning them. [Laughter]

But anyway, there's obviously other purposes going on.

WRIGHT: You've spent so many years as a pilot in the Air Force. Did that help you meld into this DOD mission without too many questions?

BLAHA: No. …

WRIGHT: Is there anything that sticks out in your memory about that mission that you can share with us?

BLAHA: Yes, I would say, overall—and you'll read it, probably, in that story. I had intended to read it before I did this, but I didn't have time. But I will just tell you this. The crew was a very homogeneous crew, and I got absorbed into it pretty quickly.

I thought Fred Gregory was—I'm going to call him a real good commander, because he was a commander who would give responsibility and authority to the other four people and sit back and watch them perform. He wasn't sort of looking over your shoulder. So in training he let you make mistakes, and then he just was wanting you to be ready for the mission. Personally, I liked that leadership style, myself, so that worked real good. He was very strong, I thought, as a leader. I'm going to tell you some funny stories, maybe, here in the history on the other side of it, but as a leader I'd say that's his strength.

Of course, Story is a very qualified guy, who performed a lot of good work for the crew, and I thought K. T.—this was her first mission at the time, but really a good crew person, and you could rely on her to do what she needed to do. Sonny Carter was just outstanding. On the trips we would fly with as a crew, he was funny, because in his head were the names of songs and singers, and he was always talking about really great artists who sing well and write good

music, and then he'd always be talking about movies, too, and actors. Anyway, he was a good person to talk about those kind of things, as well as a very good crew person.

WRIGHT: You had a little bit of a delay in landing. They waved you off for a few hours.

BLAHA: Oh yes. That was funny. I could tell this story, and I guess Fred would be happy if I told it. Maybe he wouldn't be, so I don't know; it may be one of those things that I once said—well, after I got the written back, I decide to cross out. But Fred told me early on in training, "Hey, John, I'm going to tell you something. I like the launch, and I like the entry, but I don't like being on orbit." He said, "But I fly to do the launch and the entry. They're fun." And that was true. I saw that, because he was just someone who was affected on orbit by no gravity. Anyway, that means he doesn't want to stay there any longer than he has to. That's why it's relevant to your question.

So it was intended entry day, and we're all suited up, and we're getting ready to come in and everything. When they waved us off, it was terrible. I mean, Fred cursed a few words. We had three crew members who were doing somersaults in the middeck, slapping each other on the back and happy because we had all this spare time right now, waiting for tomorrow, and that's reflected in the—that's when I dictated that story.

WRIGHT: Great. Okay.

BLAHA: So from Fred's perspective, staying on orbit another twenty-four hours is not a good idea. He would just as soon have landed. But anyway, so we were delayed, and then we had to wait for twenty-four hours, that's true. [Laughs]

WRIGHT: You had talked about his strengths as a commander. Your next flight assignment placed you in that role. So tell us how—the training and how it all came about and what you thought about being in charge of this next crew for STS-43.

BLAHA: Okay. Before I do that, I'll tell you what happened then on real entry day with Fred, just to show you what type of guy he was. There we were sitting on the flight deck. We are fifteen minutes from the deorbit burn—that's a pretty serious time frame—and we get the go for the burn, and I looked over, and I see Fred, and he has two socks streaming off his ears. You know that one comic character, kind of like Goofy? Well, that's what he's doing. I looked over there, and I said, "Boy, Fred, you have some long ears."

He said, "You don't like my ears, John?" [Laughter] Anyway, it was just incredible. But his real purpose in doing that was to kind of just get everybody at ease. He always did little things like that, because he's always just looking at the big picture, which I thought was interesting with me.

WRIGHT: That's great.

BLAHA: Then when it came time to do the execute for the burn, Sonny Carter had always said, "You know, you guys are always doing these things up here," during training. "Hey, Fred, why can't I push a button once?"

Out of nowhere, it's thirty seconds or so to the burn, and Fred turns around and said, "Hey, Sonny, you said you never got to do anything. You want to do something?"

Sonny said, "Yes, boss," and he said, "What do you need?"

He said, "Well, someone's got to execute. It's now fifteen seconds and counting down, and fourteen."

Sonny says, "You've got to be kidding me. Man, I get to do this?"

"Oh yeah, just go ahead. Push the execute button, but you've got to do it before it counts down."

It's five, and I'm thinking, "Jesus, is somebody going to push that thing?" Sonny was laughing for a second. So, to me, I liked his leadership style. It was good.

WRIGHT: Yes, I can see why you'd be relaxed, too. [Laughs]

BLAHA: Okay, so I wanted to tell a little more of that, but okay, now, back to your next question.

WRIGHT: I'm glad you did. I wish I'd known more of that.

BLAHA: So I go to 43 now, you're right. I think I grabbed a lot of things I saw him do and took up the philosophy of look, these four people assigned to this crew, they're all sharp people. They

don't need to be mothered to death. You have to tell them what their responsibility is and then don't look over their shoulder. So I think I followed that philosophy.

I remember I was even more direct than Fred. Early on I told everybody, "Look, I don't care how many mistakes you make during training. You can talk and ask all the questions you want in the debriefs. I'm not worried about us looking bad in training. I just want you to be ready when we launch." I like that, and I learned that philosophy, I think, from Fred, and I liked that. It was good.

WRIGHT: When you got time for the launch, it was delayed by a day, and then the next day the launch was delayed again for another week, and then once again it was slipped a day. How did the slips in the schedule affect the crew?

BLAHA: My honest answer to that—and we all talked about it, too, so I think it's generical; or maybe the other four are telling you something different—from a crew viewpoint and from your immediate family, it's not an impact. My wife will tell you that. But we all felt sorry for friends who had to pay their own money to come down there, and we thought, "That isn't fair to them. They're the people who this isn't fun for." But for you, the government's paying for everything, and it doesn't matter whether it will launch today or in two weeks or a month. It's not a big deal.

Then you actually, I think, benefit from it, because when you go down to launch, you may be all kind of keyed up, so when you delay a day, I think you're more ready the second day, and if you even delay the week, and you come back here and you do a few sims [simulations]. You go back down, and it's like you just feel totally comfortable about everything. So I think you feel—it's better from a crew viewpoint. Not that you want to plan to do it this way, but—so

it's not a negative impact at all. I think it's a horrible impact for the people who are your friends and family that had to pay to go down. …

WRIGHT: Did you have any thoughts during the slips, because some of the slips were based on technical or mechanical issues?

BLAHA: No. No, because I'm not real smart, anyway, and I always used to just believe in the team. They explain it to you, and you listen so that you understand what it is, but the real bottom line is you need real smart engineers across all of the disciplines, and you believe them, because they know it, really, better than anybody.

WRIGHT: Any special words that you shared with your crew when you finally launched and you were in orbit?

BLAHA: I don't remember. I can't say that. Let me try and remember; you say that. I don't think any special words. I'd have to read—I brought this little 43 write-up that somebody put together. I guess we put it together after landing, this 43 crew. I'll leave that with you.

WRIGHT: Thank you.

BLAHA: I don't really—when you say that, I don't remember. What I remember about STS-43 is—oh, well, there are two things I really remember about it, so I'll go back. And I don't know if Shannon [W. Lucid] told you the same thing, but it was my perception.

I always came back from the first two missions, and you give a debrief to the flight surgeons. Okay, so I did that. In my second mission, after the debrief the flight surgeon said, "John, there's another person who says similar things."

I said, "Who is that?"

They said, "Shannon Lucid."

I said, "You've got to be kidding me. Okay." So then when I got assigned to a mission and she was on the crew, too, boy, I went over to her and I said, "Hey, Shannon, so-and-so said you and I both say bop, bop, bop. Is that right?"

She said, "Yeah."

I said, "This is actually pretty significant. I'm going to call it the psychological, maybe, thing that occurs as you go into space on a mission."

So I said to Shannon over the next couple of months, "Hey, when we get on orbit, the first thing I'm going to do is slide over next to you, and I want you to look me right in the eyes," and we did this for each other then. "I want to know, am I any different here than I was on the ground?" Because I needed to know that before I knew [whether or not] any other observations I was making were valid, because if I was also different, then my observations were clouded on the subject of human beings and how they as a human being [were] changed or not changed. So that was really interesting to me.

Then over the year training, or a year and a half, whatever it was, with the crew, I really became good friends with Shannon, because we were the same age. Our kids were the same age. We grew up in America in the same time frame. Anyway, so we flew the T-38 an awful lot together, and we sort of talked about all those things, which I thought was interesting. I learned a lot. I would summarize it this way. She would laugh if she heard me say this. I learned a lot

about a woman who was my age, growing up in America, who wanted to be a professional, how it was different than it was for me, which I thought was really enlightening. That's something I learned that I thought was pretty neat from her.

Anyway, now we're on orbit, and I don't know why, but many times, every now and then—Shannon does a whole lot of things, and she gets stuff done pretty quick, and I even noticed it in training. So it's kind of like, "Well, what am I supposed to do, John? Is there something I can do?"

What I finally started doing is little things that I was doing on orbit, I would say, "Hey, Shannon, why don't we just do this together?" So we had a lot of fun doing that. We would do water dumps together. We would do [cryo reconfigurations] together. By together, I mean, literally, we made it a twosome. Somebody read the checklist; the other one [would] execute it. The two of us just really, we had a lot of fun doing that, working together, so we did a lot of working together on orbit. It was fun.

She was a real strong crewperson. I mean, she would do anything. Janitorial tasks, whatever [had] to be done, she was like, "I'm ready to do it. Give me work to do." Which was interesting, I thought.

WRIGHT: During the mission did you two have another check of each other as you did when you first went up, up in orbit, when you asked her about if you had changed or things were different?

BLAHA: You know, I don't remember that, but if we had, I think she would have told me, because we had got where if it was something bad I had to tell you, I'll just tell you. "Hey, John, you're screwing up this."

"Oh, okay."

I don't remember her doing that.

WRIGHT: Well, that's interesting. I don't think we've heard that before. While she was there, speaking of Shannon Lucid, she set a record for the greatest number of flights for an American woman in the hours in orbit. But you, also, too; you were the first time that an astronaut had flown three times since *Challenger*, so I guess that was a mark for that. As a commander you were also involved in at least one experiment that we were able to find, the Investigations into the Polymer Membrane Processing Experiment. Is that normal for commanders to be in an experiment?

BLAHA: I don't know. I always was willing to volunteer if they needed additional subjects to do whatever they wanted to do. So, yes, I always did that, and especially the life science people. I came to like them and think they were trying to figure out things. So why shouldn't I volunteer to be a lab rat for them, to give them additional data? Not that I knew anything. Usually when I did something like that, I'd have the crew member that knew all about it just hook me all up and start doing whatever they had to do, and I'd just be a lab rat for them, if that makes any sense.

WRIGHT: Yes. I'm sure they appreciated that, a willing subject, and one that was hostage, at that. [Laughter] You were up there for nine days, and then you landed the *Atlantis* on the runway at Kennedy [Space Center, Florida], which was different, because you had been landing [at] Edwards [Air Force Base, California].

BLAHA: That's right, both previous times at Edwards.

WRIGHT: This time, too, you were the one who was doing the landing. So tell us how the Orbiter handled.

BLAHA: It was just like the STA [Shuttle Training Aircraft] and just like people say, so there was, to me, no surprise, except there was one big surprise. I [debriefed] this—I'll say it in a minute—and, of course, I then saw it happen. It's happened many times afterwards. It was a new flight rule that came out because of it, and even the last mission, they did it. That is, when you're landing at Kennedy [runway] 15 in the morning, on a clear blue day—in the STA you don't see this. So if you're the STA pilot flying, and I've done that role, too, you don't notice it.

But in the Orbiter I almost fell over when I came around the corner right at the end on the inner glide slope, I tried to pick up the ball/bar, and I couldn't see it real good. I couldn't see it with clarity, because of glare, some Sun glare in the morning off the window that you didn't see in the STA. I really briefed that, because if you can't see the ball/bar, you can have a tendency maybe to get low.

So that surprised me, really surprised me, and so I really debriefed it and they made a flight rule then that said, with certain constraints, definitely do a right turn and land on [runway] 33, and even accept some tailwind. On a clear day where there [are] no clouds at 15,000, there was Sun glare in the morning. So that was a surprise on 43, to me, that I couldn't see the ball/bar. Other than that, it was just like the STA.

WRIGHT: As a pilot, is it good to be able to land the spacecraft?

BLAHA: Oh yes.

WRIGHT: It was different from other aircraft that you had [flown]?

BLAHA: My only comment I would make, and I don't know [whether] other people agree or don't agree. From my viewpoint, the Space Shuttle, when you are manually flying it, was one of the easiest airplanes I've ever flown.

The reason is, is it had a rate command, attitude hold flight control system. What that means is you could take the Space Shuttle and stick it in an attitude, take your hand off that stick, [and] it would not move. It would stay right in the bank, the nose down, and it wouldn't move a nit. It would just stay there. If you kept your hand on the stick, that's not true. In fact, you don't want to keep your hand on the stick. If you do, the vehicle's slowly getting out of trim, and, of course, you have to continue to hold it. So it made it easy to fly [to not continue to hold the stick].

I used to think when I was flying at mainly on that portion of the entry that it was in automatic with me flying at manual, because you could take it, put it in a bank, put the nose down, and let go of the stick, and it would just sit there and purr around the corner. You could sit back and just watch it like it was in auto. If it looked like it needed a correction, why, you could just grab the stick, make that little correction, take your hand off the stick, and it would just sit there. When it needed to be rolled out level on final, you could just take the stick, roll it out, let go of the stick, and it would just sit there. It wouldn't move.

So I always used to say, with the training we had, which was outstanding training, and I salute the engineers who built the STA and did all that hard work, and the Space Shuttle flight control system, which was a lot of people out of Rockwell, that, golly, that vehicle was, I'm going to say, easy to fly in that flight regime. Any airplane I've ever flown doesn't fly like that. You can't just put it somewhere and let loose of it. It will roll off one way or the other. …

WRIGHT: That is. That's pretty interesting. Well, after you landed, you got some tasks that you were overseeing aspects of aviation, payload, Orbiter safety for the Astronaut Office. From that task you made a number of safety recommendations that extended the Duration Orbiter Program and earned you the Stephen D. Thorne "Top Fox" Award. Can you share with us what some of those recommendations were or why you felt they were necessary?

BLAHA: Yes, I remember that time frame, although I hadn't thought about it for a long time. One of them was I was asked, so I did, I put together a team of people, of flight controllers and engineers, kind of small team, seven, eight people, and we went and did an assessment of 100 percent versus 104 percent for ascent power settings on the main engines.

We went to Marshall [Space Flight Center, Huntsville, Alabama] with our little team, and you always feel bad, because here they're the experts, and you're coming in as if you know anything. Anyway, but we tried real hard to lend some assessment to that. When I thought we came up with a pretty good result, we went and gave it to the Space Shuttle Program and presented the results of risk of going to 104 [versus 100 percent]. Anyway, that was one of them.

The other one was that was really important was day [versus] night landing risk. So I did another assessment with that and involved a lot of different—always, whatever the assessment was, I always tried to involve what I thought were the right people who could really contribute. So when we were done with the day versus night landing risk assessment—we did that, and then we did day versus night launch, which was a similar thing. Really, what it was more about was if we got into aborts, in some of our contingency aborts, because it was night, because the lighting in the cockpit and, anyway, a whole lot of things. So that was another one.

I guess I've named three. There were a couple more, but we could probably move to another subject.

WRIGHT: Well, just quickly, your suggestions, were they received well by the engineers?

BLAHA: Oh yes. Yes, because if I remember correctly, and I could be wrong, I think Brewster [H. Shaw, Jr.] at the time was the Space Shuttle Program Manager at the time, and we had gained some bit of confidence working on some things earlier in the office. He was the one who was saying, "I need you to go do this." And working with Fred Gregory [who] at the time was the safety guy at [NASA] Headquarters [Washington, DC], so they would evidently say, "Hey, John, we need you to [evaluate this for us]."

WRIGHT: Well, that worked out well. Everybody knew—

BLAHA: Yes, so they wanted to get an assessment on those subjects, yes.

WRIGHT: That's great. Well, within the year it was announced that you were going to command yet another mission, STS-58. Now, this one was, we could say, is maybe more than 1 percent different, because it was a Spacelab life science mission.

BLAHA: But see, again, to me—yes, to me, with everything that's going on, 99 percent—maybe I ought to be saying 98—is really the same. There are some little differences between the missions, yes. But, anyway, that's my way of looking at it.

WRIGHT: It was fourteen days long, and you had a lot of other crew members, but they were in the shape of rats, so you had some experiments.

BLAHA: Yes, we had seven people and forty-eight rats. That's right. I had some funny things that I'll tell you about the history of that flight, because they are funny. I guess they are what is more history than the normal technical thing.

Let's see. The first thing is I'll always remember when I went up to Washington, D.C., at the start of that mission, and I was in this big room, some big boardroom. Everyone in the room was Dr. somebody, and so I thought, "Gees, all these people are smarter, and I'm not real smart." They were all people who were very involved with the experiments on this mission. I don't know why we even had this meeting, but the purpose of it, I guess, was to do a little kickoff with the crew and these people.

Of course, on the crew we had [M.] Rhea Seddon, whose background was a doctor, and we had Dave [David A.] Wolf, whose background was a doctor, and we had Shannon, which was good. When Shannon and I were assigned together—we thought that was great. I mean, that

was good. Of course, she was a chemistry doctor. We had Marty [Martin] Fettman, who was a veterinarian. We also had another guy, Larry [Laurence R.] Young, who was from MIT [Massachusetts Institute of Technology, Cambridge, Massachusetts], was a real smart guy and knew all about the vestibular experiments. They were all his. He was the primary PI [Principal Investigator]. And there was another guy—[Jay C. Buckey Jr., a cardiologist].

WRIGHT: I had Bill [William S.] McArthur [Jr.] and—

BLAHA: Yes. Oh yes, Bill and Rick [Richard A.] Searfoss, but they were normal people like me.

WRIGHT: Okay, normal people, okay. [Laughs]

BLAHA: They were normal people. They were Service Academy grads [graduates] and pilot kind of people. That was what I meant, normal people. [Laughter] …

What we ended up doing as a crew—first, a couple things helped here. Rhea had flown SLS [Spacelab Life Sciences]-1, STS-40, and this was SLS-2. So, to me, her as a payload commander was really good, and we immediately split some tasks. "Rhea, you're in charge on orbit of the science, period. You're in charge of that lab, and you do everything you need to do there, even with the people and how we're going to do the experiments. I'll worry about the Orbiter side." So that was good. Of course, Rhea did a great job through all the planning.

What we ended up doing that I really liked, and I liked all this, was we made the two payload specialists who weren't selected to fly, Larry Young and Jay Buckey. We made them part of the crew, and when we made a crew picture, we had nine people in our crew picture.

When we did sims, I let them come over into the sim and participate. When we put out an announcement letter, even of the launch, we had nine people sign it. I told them in the Astronaut Office to let them even invite people, because the whole concept was I wanted to make them really part of it, because they were then going to be our two on-orbit CapComs [Capsule Communicators] working out of Huntsville.

Okay, and what this meant was now when we were on orbit, they were in total sync with every detail of what we were doing, not just a little bit in sync, but it was like having two crew members you'd trained with who were your CapComs. Oh, wow, and that just paid off in spades, because now we set up—and I was one of these people, [an extra] volunteer for many of the science experiments.

So what it meant was we're clicking along in the lab back there, and if Rhea all of a sudden said, "John, get down here now. I need you to do—," that meant I was going to be a subject, and an additional subject to the ones planned. You know, I'd go zooming down there, and Rhea would strap me up to whatever the science was, and they'd get another subject of data. Then Rick Searfoss did that, and Bill McArthur did it.

Because of this people on the ground really knowing what we were doing, Larry and Jay Buckey, they knew what we were doing. It wasn't like we had to ask permission of the ground, and we even talked about it with the flight team before, because if you do that, and then twenty minutes later they come back with, "Oh yeah, it's okay," well, it's too late. So we just did it, and we'd tell them we're doing it, and it worked out really good. We were able to get like 30, 40 percent additional data using Bill, Rick, and I, on most of the experiments because of that.

But the keys were Rhea really knew what she was doing from a planning viewpoint ahead of time, and Jay and Larry knew everybody as if they were on board, so even though they were on the ground, they just were—it made it all in sync. Really good.

WRIGHT: A good plan.

BLAHA: Yes, and it all worked out really good.

WRIGHT: You mentioned the involvement with Huntsville at Marshall Space Flight Center. I know that Ames Research Center [Moffett Field, California] had a lot to do with this flight as well, preparing. Did you have a lot of communication—

BLAHA: Yes. Yes. Okay, it was Rhea who really worked with them. Rhea and Shannon and Marty and Dave, they worked with them. I totally deferred that subject and didn't even get involved with it. On orbit, I'd float over and watch what they were doing every now and then, because I thought it was pretty interesting.

One thing, as a guy knowing nothing about anything, that I observed that I'll never forget is when they cut open one of those rats. I couldn't believe what I saw. On the ground, humans, any animal, blood runs all over the place, and it looks kind of messy. It didn't happen up there. You made that cut, and the blood just stayed all right there, let's say, next to the spine or the bone, and it didn't run all over the place. So it wasn't messy. Me, I'm not a medical person, but it was clean. I thought, "Good Lord, that's amazing." Because fluids don't run, it's gravity

that's making them run here. Of course, up there, they're just adhering to a surface. It's coming out and adhering and just staying stuck to it. Crazy.

WRIGHT: Well, this was the first time that the spaceflight experiments were done to assess the changes in tissues while they were in space.

BLAHA: That's right. That's right. And they really, again, in your debrief on this mission, Rhea and Marty were the ones who were doing most of that, and they really knew what they were doing, and I won't try to act like I knew anything about it. [Laughs]

WRIGHT: Well, one of the other types of experiments that you worked with, we understand that you did some SAREX [Shuttle Amateur Radio Experiment]. You wanted to see if you could contact the schoolchildren.

BLAHA: Oh yes, that was good. Rick Searfoss really was the one who put all that together. He put together a tremendous plan that involved working with people on the ground who wanted to do that. Then he would get where each crew member would have a couple different groups of schools. Anyway, Rick worked out a very good SAREX plan so we could do communicating with schoolkids on the ground, yes.

WRIGHT: How long were you talking to them from space?

BLAHA: On those passes, always, always. Even when I was on the Mir, it doesn't make any difference. Basically the length of time is about seven minutes total, and sometimes it's only five minutes. What shortens it is how close you are to running right over the top. So if you're offset to the left or right of them, that limits the contact range. So it's on the order of four to seven minutes, depending on what the ground track is relevant to where they're located.

WRIGHT: Was this a daily function that you did, or was it—

BLAHA: I'm trying to remember. There were some days, obviously, when we didn't have them, but we did a lot of them, and again, Rick worked with a lot of people on the ground who put all that together. Rick could tell you an awful lot about that, so I'm not going to try to act like I know how he did that.

WRIGHT: Okay. Well, we'll make a note to [ask.]

BLAHA: He did it good. I actually stole from that when I flew on the Mir, because then I knew some of those people, and I told them, "Hey, I want to do something similar," and actually from the Mir we ended up doing that. But I learned from what Rick had put together.

Rick, by the way, was a very talented man, Rick Searfoss. This guy's a pilot. He's an awful smart man, though. He was like he was some astrophysicist or something, but he was a pilot. He was very smart. I used to think of him as a smart young man. He was really a talented guy.

So was Bill McArthur. I thought he was really a very talented guy. He was the MS [Mission Specialist]-2 on the mission. In fact, I liked Bill so much that—and thought so much of him that what I finally did was say, "Bill, I'll tell you,"—about even two months into training—"you're in charge of the computer system." What I meant by that was, "If we have computer mals [malfunctions] in orbit while we're training, you pull out the mal book. I'm not going to do it. You're going to do it. You learn the computers really good, and I'll kind of be a backup to you, if you want."

So Bill was very talented. I also had him do that on the [life support system]. So, if you will, things that were maybe more traditionally mine on orbit, I thought, since he was going to be an MS-2 kind of person, that this would also be good for him to really [learn these systems]. So I let him do the on-orbit [malfunctions]. Obviously, the entry and ascent ones I had to do. There was a method to my madness. That made him a better MS-2 when things were in a time crunch [during] ascent or entry on those systems. So, anyway—then another funny thing happened. I have to tell you; I almost forgot. Because then you can leave the mission.

My daughter, for whatever reason, was a—I think she was a sophomore or a junior at Purdue [University, West Lafayette, Indiana] at the time. She was [studying biochemistry], and during the summer months, I had asked the crew if they would mind if she came and sort of was in the Life Science Research Lab that we had over in another building; I forget what building. It was the simulator over there that we did a lot of [Spacelab] training. Would they mind if she just came and watched?

They said no, so she came. Well, that ended up starting something that was interesting to me. Marty ended up dating her, and what that meant led to something incredible; I mean, incredible—it's worth documenting in the history, I think. [Wright laughs.] What it led to was

when we went down to launch on STS-58, she was Marty's significant other. So just like my wife was with me, Carolyn was with Marty, our daughter. So there we are down in the crew quarters, and my wife and I would say, "This is interesting. Here we are in quarantine, and our daughter is really over there with Marty." [Laughter] That was just interesting.

Now what happened out of that was, she told us later, now that she's older, she said she never knew as a young kid with the other missions what it was like that my wife was going through, because now she really cared about someone on the plane. [Laughter] She said that. I thought it was interesting that she sort of got to see this program from a viewpoint of a junior high kid, high school kid, and now a significant other, or like a spouse, which I thought was kind of interesting.

Then another crazy thing happened, that she got to see. Oh, well, not on STS-58, so I'll leave that alone.

WRIGHT: Well, you can just tell us anyway.

BLAHA: Well, it follows there. Yes, when I was going to land from the Mir, [and] at the time the NASA Administrator would come up a couple of days before and just say to you, "Whatever you want, within reason, whatever is possible, as soon as you land, I'm happy to bring it to you."

So he said, "What do you want?"

And I said, "Well, I'll tell you what. I want Brenda."

So when I landed, what that meant was he brought Brenda—or Dave [David C.] Leestma did—literally into the middeck of the Space Shuttle. And my daughter was in the White Room vehicle, and what they ended up doing, which I thought was kind of neat, since my daughter

liked biology and chemistry kind of thing, is she got—I really said this more for my daughter. She then went around with me for the next five hours in all the postlanding medical stuff that was going on, and so she and my wife were with me the whole time for those four or five hours. So she saw a lot of interesting experiment things, from the scientist's viewpoint. So I used to think she got, as an outsider to the space program, she ended up seeing a lot of things that were maybe useful, or not useful to her.

WRIGHT: Well, it's very unique. It won't be something she could repeat again, so that's pretty neat timing.

BLAHA: Yes. Yes.

WRIGHT: Well, thanks for sharing that.

BLAHA: I don't know if that's important. That's what I remember these years later. [Laughs]

WRIGHT: I think that's great. Before we leave 58, there was a laptop computer simulator put on board, because there had been a belief that the pilot, or rather the commander, would need maybe some refreshing. Did you utilize that computer? What was your assessment of that?

BLAHA: Yes, we had that the first time. We were involved with it, that's right. We used it on orbit. Rick Searfoss and I had a different opinion. That's important to say right at the start. Now, this is my fourth flight. I thought it was okay, and I also thought I was better off because

of it than if I didn't use it, because, really, what it did for me was just remind me that, "Oh, okay, yes, air speed, attitude, yes. That's where that's running, yes." So when I really saw it at five minutes before landing, if you want to think that way, I was more on the step because I'd made some dry runs from 45,000 feet down [while I was on orbit]. So, in that light, it was, I thought, useful. But I didn't think it felt like a real spaceship there, and so in that light, it could be negative. So that was my view of it.

Now, Rick Searfoss, he thought it was outstanding, and since Rick's a real smart guy, maybe he's right. But he would place a higher value to it than I would. But I thought it was a good idea. I actually thought it was good enough, though, to suggest that maybe we could build a little simulator that, a couple of hours before the deorbit burn, you could run a couple of things and see everything working, and, "Oh, a failure occurred, and yeah, I need to do—," and think it through a little bit, and it would actually get you more up on the steps so that if something really did happen, you would just react to it a little quicker.

So I thought the idea, the concept, was good. It was very good. I thought the landing simulator itself, called PILOT [Pilot Inflight Landing Operations Trainer], was maybe 10, 20 percent effective. Rick would probably say 90 [percent]. And I'm not saying he's wrong; I'm doing that to bound it.

Let me think. Something else funny happened that I'll have to tell you on 58; I thought it was funny. On 58, why I don't know, but throughout the entire mission I felt like I did driving in an automobile from San Antonio [Texas] over here yesterday on I-10. I just felt, "I feel 100 percent comfortable with everything that's going on here," which I thought was interesting, and I did. Then on the entry, wow, it was like I was seeing everything, which I thought was good. It's a shame that—and I don't know that—well, I won't say that for the history. It's a shame, maybe,

you don't have fewer people doing it more often, and boy, you could cut down the training. But then that has its negative side, too. Not as many people would get the opportunity [to fly in space], so I guess I'll say it that way.

WRIGHT: There you go. Just one more thought about it. The fourteen-day flight, did you feel any different effects for you when you got home.

BLAHA: I didn't. I didn't. When I flew on all those missions, for whatever reason, nothing was affecting me. I had no SAS [Space Adaptation Syndrome] symptoms, which is similar to Shannon, see? I had none, and that was interesting. So, no, whether it was the fourteen days or the nine days, it wasn't different to me. Although there was something different on that mission, but if you were ever going to have this problem, you wanted to have it when you had a lot of doctors on your crew. [Wright laughs.]

For whatever reason—I shouldn't put this in the history, but I don't know; I always believe in the truth. If it's truth, it doesn't hurt. But anyway, it's the day before entry, and I had diarrhea. Why I did, I don't know, but I had four doctors taking care of me, and one way or the other, they told me they were going to get me fixed so that I could land the next day. And they did.

WRIGHT: Hope they all didn't send you a bill. [Laughter]

BLAHA: No, and they did. They didn't send me a bill, but I had all the help in the world. So if that was ever going to happen, that was the perfect time.

WRIGHT: That was the good time, huh? What were your assignments and duties after you got back from this flight?

BLAHA: I have to think.

WRIGHT: I guess the other part of that question is did you think that you were going to have another flight, and were you starting to think about leaving?

BLAHA: No. No, I wanted to fly again. When I landed from that mission, of course, "Hoot" [Robert L. Gibson] was now the chief of the office. He's Rhea's husband. We were out at a dinner right here in town, I don't know, a week after landing, a lot of us. And I said, "Hoot, are we just going to assign mission specialists to go fly on the Mir, or are we going to let a pilot do it, too? Or is it going to be a mission specialists club thing?" [Laughs] Anyway, that started my mission up to the Mir.

No, I wanted to fly again, but I felt so far up on the stump with the Space Shuttle. Then I thought, "Why don't I just go do something different?" So I wanted to fly on the Mir, and I thought why does it have to just be mission specialists? As it turns out, all the other six people that flew on the Mir were all doctor kind of people, Ph.D. kind of people, and I was only the oddball pilot kind of person.

WRIGHT: And it gave a different perception and observation.

BLAHA: Well, I don't know why, I had a great feeling that I was going to solve this problem of the long flight, going back to your other question. So Dave Leestma arranged for when I came off that Mir, because I thought, "Hey, I don't know what all that stuff is about. I think we can fly for four, five, six months and still land the Space Shuttle," and boy, did that turn out to be wrong, because Dave Leestma had an STA ready when [STS]-81 landed, and I was going to go climb on it and make an STA approach.

I remember when Dave said to me, "John, are you ready to do that?"

I said, "Dave, the answer is no, and even if I mentally wanted to, I physically could not do it," which was a shock to me, because all through the Mir mission, I also felt just normal. Through landing, through rollout, I felt normal. I thought, "Man, all that stuff the Russians told me was wrong." And wow, [it turned out the Russians] were right. For the first time I had symptoms coming back from a spaceflight. I was shocked by it. I was totally shocked by it. The vestibular problems, the cardiovascular, I couldn't believe it. I didn't want to believe it. I was sad that it was true, but I couldn't [go fly the STA].

Then Dave had it set up; he said, "Well, if you feel better later in the day, we'll fly it then." That was eight-thirty in the morning.

Gosh, I told him at four or five in the afternoon, "No way. Impossible." Mind you, they're pushing me around in a wheelchair. [Laughs] I mean, it was impossible. Even the next morning when I felt kind of okay walking around, he had one set up, and I said, "Dave, I couldn't do that if I had to. Let's just totally forget my idea of let a pilot fly for a long flight and see [if he can land the Shuttle]."

Now, during the entry on the real Shuttle, I felt okay. But boy, after wheel stop it was like all the connections came undone, which was a shocker to me, since I had never had any

symptoms. But anyway, I had really wanted to have a go at that, and of course, that was one of my selling points for why we ought to have a pilot go do it. [Laughs]

WRIGHT: It worked. [Laughter] How long after you returned then before you started to feel normal, after you got back?

BLAHA: Yes. You know, from my viewpoint, it was weeks. It was weeks. I would say it was two to three months when I felt normal. The data would tell you it was six months till my strength measurements and my bone density and everything was the way it was before I launched. To me, why that's so important and all that is so important is that has an awful lot to do with are we ready to really put crew members on the surface of Mars, because I don't see a therapist there to work with you. I don't see a flight surgeon waiting for you to land on Mars. I don't see a swimming pool for you to work out in for a month. And mind you, NASA is working very hard on trying to understand and solve that problem.

WRIGHT: It's been almost ten years since you returned. Are you having any issues or—

BLAHA: No.

WRIGHT: —has everything just been fine ever since those six months, huh?

BLAHA: Oh yes. Oh yes. But it's amazing to me. So there's a real challenge. Going to the Moon was enough—"Buzz" [Edwin E. Aldrin, Jr.] and I have talked about this; Aldrin. You

know, going to the Moon is one thing, because it's two days there, and then you're walking in one-sixth gravity on a spacewalk. Then it's two days back, and the whole mission is an eleven-day mission.

Going to Mars is two hundred days there. In today's world, if we did it the way we go there, we went to the Moon, where you're really as if you've came off the Space Station, because you were there for four or five, six months, and then, man, you're on the surface of Mars in one-third gravity. [Laughs] I know one thing. We need to solve that problem. We can't have humans land there until we solve this problem.

WRIGHT: Once you were back up to being your normal self after returning from Mir, did you have new assignments? At what point did you start processing that you wanted to leave the agency?

BLAHA: I would say that now that I've—and Rhea said this once, which was funny to me, a couple of years ago at a conference. She said, "John, I remember," and she said it kind of quick, but to the point. "I remember on 58 how you said you feel so good when you come off a space mission, you could probably stay there for a long time and it wouldn't have any effect on you. That turned out not to be true."

I said, "You're right, Rhea. I found my limit," from the duration as far as it affected me when I returned. [Laughter]

But let's see. To make a long story short, I decided in the first two or three months that I thought I was ready to return home to San Antonio and earn some money for about five to ten years so I wouldn't be living under a bridge for the rest of my life. I like the space program. I

love the space program. But I figured I had to stop riding a tricycle like I was five years old at fifty-five, and go do a real job, earn some more money so I wouldn't live under a bridge for the rest of my life. So that was a good decision. I look back now, and I'm happy I did that, but I loved the space program, and I liked flying in space. If someone could have figured out how to pay me maybe three times what they were paying me, I would have been happy to stay.

WRIGHT: Happier, huh? [Laughs]

BLAHA: Yes.

WRIGHT: I know that when we talked many years ago that you were involved in the Challenger Learning Centers. Do you still have involvement in those as well?

BLAHA: Oh yes. Oh yes.

WRIGHT: Tell us about that.

BLAHA: The one in San Antonio is really neat. We like it. The national office uses [the San Antonio Challenger Center as a benchmark for other Challenger Centers]. … I've asked [the national office], because there [are] about fifty-two [Challenger Centers, and] and they say there are three or four like us that are really running real good.

WRIGHT: Stellar.

BLAHA: Yes. So the one in San Antonio is really good. We've had, gosh, I think it's now 72,000 middle school kids, at about 30 a group, have gone through the center. Something like 800 middle school science teachers have come there in the summer and trained. The program has been a big success in San Antonio. I don't know if it would be in other cities, but in San Antonio it's been a big success.

In the summer we have some space camps that we run for one week, kind of like a day camp. You know, parents bring their kids at nine, pick them up at four, for five days during the week. We call that a Space Week, and that's turned out to be real successful, and people like it. Some of the other science coordinators of the schools in San Antonio have come up with other ways to use it, and UTSA [University of Texas, San Antonio, San Antonio, Texas] has a engineering prep program for tenth, eleventh, and twelfth graders going to be and going into those grades. They've had that for years, twenty-five, thirty years. They've now incorporated our Challenger Center in, because they bring students over during the summer to fly the missions, and so it's turned out to be a good thing.

WRIGHT: Do you personally have a lot of activity on a day-to-day basis?

BLAHA: No. No. I [am] the Chairman of the Board of Directors. We [have] a foundation we formed to earn the money and get the thing in place. So we've hired full-time employees, and we have some part-time employees. Every now and then I'll go over and talk to the kids there when they're done, but we have other real people who are doing the real day-to-day work. I'm involved from a Board-of-Directors viewpoint, but we have a lot of [other] people [who do the

day-to-day work]. Some of the things I've told you about weren't my ideas. Some of the people working there, it was their idea, and they did all the work and the coordination, and it's turned out good.

We have another program we started—that they started; not me—called the Micronaut Program. They have elementary kids, second through fourth grade, so it's a second-through-fourth-grade version of a Challenger Center mission, and that's turned out to be really successful.

Anyway, we have two [school superintendents] on our Board of Directors. I've asked them to now ask everybody in the schools, "Bottom line, do you guys want more?" Because we're not able to now support all the need or all the requirements that people would like to do. Because if they [want more, then we'll have] another fundraising campaign and build a bigger facility [with] more simulators. If they'll support it, I'll do it for them. So, anyway, [the San Antonio Challenger Learning Center has turned out] to be a good thing.

WRIGHT: Yes, it sounds like it's a great involvement.

BLAHA: It's a good thing. I think it's helping, if you will, motivate the twelve-year-old kids in science and math. It's playing a role. I'm not saying—I don't know where to put it with all the other things that go on with education, but if it has a role, it's to motivate their interest.

WRIGHT: Are you involved in other aspects of space exploration, as far as conferences or doing any of the other things?

BLAHA: I go to the Association of Space Explorers every year, but I'm going to miss the one this year, because Brenda and I are going on another PR [Public Relations] thing. When people invite us to come and talk about NASA, we will go and do it. I didn't mean all the time, but we do some of that.

WRIGHT: Were you involved with any of the aspects with the *Columbia* accident investigation or any of that when that happened?

BLAHA: No. No. My answer is no. The only involvement I had with that is a roommate of mine from both Air Force Academy [Colorado Springs, Colorado] and Purdue and pilot training, Roy [D.] Bridges [Jr.], was the Center Director, so my only involvement was watching him on C-Span in a nice way trying to tell some of the members of the board real answers that maybe they weren't—anyway, I was always applauding Roy.

WRIGHT: I'm sure he was glad to have a good friend.

BLAHA: I think, in the end, you know, he left Kennedy, like many of the people did, but he was there for six or seven years. But I think the NASA Administrator must have really liked him, because he kind of removed him before they were being asked to leave, I think, but he gave him the Center Director up at Langley [Research Center, Hampton, Virginia] that he had for about three years, yes.

WRIGHT: I think he's back in Texas now. Is he?

BLAHA: No. No, he lives in Williamsburg, Virginia.

WRIGHT: Okay. That's good to know.

BLAHA: No, we're real good—Roy and Bonita, that's his wife—I mean, literally, Roy and I roomed together, so we used to double date a lot, the four of us, when we were younger people.

WRIGHT: Well, that's a great friendship that has lasted.

BLAHA: Yes, they're good people. Yes, we like them.

WRIGHT: Well, one of the questions that we wanted to ask you before we concluded today and concluded the oral history was when you look back over your NASA career, what do you find to be the most challenging aspect of all that you have done?

BLAHA: I don't know the right answer to that, most challenging. Oh, well, I do, I guess, immediately. The most challenging two years, not only of my seventeen at NASA but of my entire life was the two and a half years I spent training and flying with the Russians. It was just an order of magnitude more challenging. It wasn't because of them. I think the cause was there was a language barrier, and you had to learn the language. By the time I was done, Russian to me was like English, but it wasn't when I was taking my first courses in Star City [Russia], so I

think it was language that made it a challenge. It had nothing to do with the Russians, nothing to do with them.

Then, as an American, because of the Cold War, you felt, "Whatever I do, I don't want to make America look bad." So it sort of was a motivation to maybe study even more than you wanted to study, to try to not look too stupid. Because you know how a foreigner can look stupid when you don't speak real well.

WRIGHT: Right.

BLAHA: So early on, man, I felt like we were just making America look real stupid. [Laughs]

WRIGHT: Have you retained any of your Russian language?

BLAHA: Oh yes. Oh yes. And when I saw a bunch of them last October—no, when I left the Mir and then I went back over to Russia in July right before I left NASA, at the time Dave Leestma was doing the job of the Flight Crew Ops [Operations]. And when the Progress had the accident, he asked me to take a little group of people over there and make an assessment and come back and say whatever it is we thought happened. Then when I was over there with the Russians again, that was my last time with living in the Russian language for a couple of weeks, but I felt very comfortable with the Russian language, which, in the end, was kind of interesting to me. It was like English to me. I wasn't doing translating; I was thinking, dreaming, speaking, hearing.

But if you gave me a Russian novel to read, notice that's a difference sensor. I couldn't read it. I mean, I could read it at five words a minute, maybe. So I spent all my time probably in Russian with the ears and the mouth, not the eyes. I could read the checklists that we trained with, so my shortcoming in the Russian language is if you handed me a book or a newspaper, I couldn't read it very quick. I'd struggle through it. If a Russian read it to me, I'd immediately understand it. But if I had to read it, I struggled.

WRIGHT: I'm amazed you remember so much now, because I've felt with language, you have to use it or you'll lose it.

BLAHA: I've heard people say that, too. Maybe it's because every now and then I can be driving a car, and I'll just in my brain shift into—

WRIGHT: Wow.

BLAHA: —speaking Russian to myself and sometimes almost mouthing it, because it's not even hard. It's not hard. If you get to that point, it's actually not hard anymore. It's not hard at all. Early on in a foreign language, like I did it in French the way most people do a foreign language in America, it seems real hard, and your mouth doesn't—it hurts if you talk it, speak it a while, even in that country. If you hear it a while, your head feels all scrambled. You've got to get through that barrier, and then it's easy.

WRIGHT: I'll remember. Would you consider the experience on Mir to be your most significant time?

BLAHA: No, but it was the most challenging. That was the answer to your question, the challenge. But not most significant, no. It wasn't any different than any of the other—to me, it wasn't different. Although I really enjoyed it, because it was something different. My greatest disappointment was that we never launched or returned on the Soyuz, because it would have been fun for me to do that in a different vehicle. That's just the way it worked out at that time.

WRIGHT: At that time. And then now it's that time again.

BLAHA: Now, that's right.

WRIGHT: Are there some other areas of your career with NASA or other aspects that you'd like to discuss? Anything else about the missions that we might not have covered?

BLAHA: I'll tell you, if I remember some, when I see your transcript that you'll give me an opportunity to change, I will just add them in, if I remember anything significant. I'm trying to think right now. Let's see, we did 33 and we did 43.

WRIGHT: Fifty-eight.

BLAHA: And 58.

WRIGHT: We didn't talk much about the [STS]-79 and 81.

BLAHA: And that's okay. I say that; I always tell people when I'm talking to them—I flew on STS-79 just like a piece of luggage. [Wright laughs.] Because I really didn't train with the crew. I joined them, and they were a nice group of people, and Bill [William F.] Readdy was a great commander, and it was nice. And Jay [Jerome] Apt was real nice, and I could talk about the other crew members. So, I mean, it was nice. But they knew what they were doing. I hadn't been involved with the Space Shuttle for two and a half years, and my real role on that crew was I was a piece of luggage.

I even remember saying to Jay Apt, flying on the middeck prior to launch, I said, "Jay, you know I really don't know too much about what I'm supposed to do down here," because I'd never been on the middeck.

He said, "Don't worry about it, John. I'll take you through everything you need to do as soon as we get on orbit."

I thought, "Okay, I'll wait till we get there, and Jay will start." [Laughter]

WRIGHT: I guess that was a sound experience for you, then, since you weren't up in the pilot's seat.

BLAHA: No, I was interested. To me, I just listened to everything and thought it was interesting. But I knew I didn't know what to do, so anyway—and then on entry with 81, similarly, although I tried to do a few things that extra day in orbit, if I could help them out. I more took the role

like Shannon showed me. "Hey, you need the garbage collected? I'll pick the garbage up. You want something cleaned, I'll do that." Since I wasn't involved with the details of what they were really doing, and really wanted to stay out of the way. So I felt like a piece of luggage again, returning on those two crews. [Laughter]

WRIGHT: Well, it's interesting observations, because you had been—

BLAHA: And I don't mean that bad, but I was happy to be a piece of luggage. [Laughs]

WRIGHT: Sure. Yes, I could see that.

BLAHA: But Bill Readdy, my wife would tell you Bill Readdy was really nice. He just took us in, even though we were only with the crew for about three weeks prior to launch, and made us feel like we were just part of the crew with everything that happened. I didn't really deserve anything, since I hadn't done anything, but anyway—and I think Mike [Michael A.] Baker did the same thing on 81. He had flown on 43 with me, so that was interesting. But it was all fine.

WRIGHT: Yes, because you truly were a crew member. You weren't the pilot or the commander, and so you just—

BLAHA: I even think more I was a piece of baggage.

WRIGHT: A piece of baggage. [Laughs]

BLAHA: I mean, I was worse than a payload specialist, if you want to call that worse. I mean, it's lower. I didn't have any real responsibilities.

WRIGHT: Except sit in that seat till—

BLAHA: And that was okay with me, you know. That was okay with me.

WRIGHT: That's right. That's right. That's great. Well, we'll take anything else you want to add when we send that, and the information that you gave us today—

BLAHA: Yes. The biggest things that I thought were these two. Now, this was just something that crews used to write after a mission. [Hands Wright a document.] But that's already old and probably tampered, whereas this stuff is real.

WRIGHT: But these firsthand observations will be great. We'll definitely add those in, and then—

BLAHA: And more the e-mails. Like that front page I would call every bit as false as this. [Shows documents] But the three e-mails and that whole story were what I really thought at the time. And I wished afterwards, now, I'd done that on all the missions. I should have.

WRIGHT: Okay. We will add it in and then send you a copy of the transcript, and if something else comes to mind, then just feel free to include that.

BLAHA: Okay, yes.

[End of interview]