

NASA JOHNSON SPACE CENTER ORAL HISTORY PROJECT

ORAL HISTORY TRANSCRIPT

JOHN E. BLAHA
INTERVIEWED BY JENNIFER ROSS-NAZZAL
HOUSTON, TEXAS – 3 DECEMBER 2004

The questions in this transcript were asked during an oral history session with John E. Blaha. Blaha has amended the answers for clarification purposes. As a result, this transcript does not exactly match the audio recording.

ROSS-NAZZAL: Today is December 3rd, 2004. This oral history with John Blaha is being conducted for the Johnson Space Center Oral History Project in Houston, Texas. Jennifer Ross-Nazzal is the interviewer, and she is assisted by Sandra Johnson.

Thank you so much for taking time to meet with us today. I'd like to begin by asking you to tell us a little bit about your Air Force career before you started working for NASA.

BLAHA: Okay. I mean, I wasn't prepared for any of this, but I'll tell you what I can.

ROSS-NAZZAL: You can give us the highlights.

BLAHA: I went to the Air Force Academy [Colorado Springs, Colorado], 1961 to '65. I always wanted to fly airplanes for the Air Force. When I left the Air Force Academy, I went to graduate school at Purdue University, West Lafayette, Indiana. I received a master's degree in aeronautical engineering. From there I went to pilot training at Williams Air Force Base in Phoenix, Arizona. I met my wife there. I spent a year in pilot training. Really enjoyed it, liked all the flying. I roomed with seven other Lieutenants in a beautiful home on fifteen acres. We had a good deal and a lot of fun during pilot training.

I got married five months after I completed pilot training. I was in F-4 training in Tucson, Arizona [Davis-Monthan Air Force Base]. During F-4 training, I had an opportunity to volunteer for an exciting program, showing the South Vietnamese Air Force that the A-37 was a good airplane and would perform very well in a close air support role. They ended up purchasing twenty-four squadrons of A-37s. I enjoyed my time in Southeast Asia. I flew 361 combat missions. I thought it was a lot of good flying.

When I came back from Southeast Asia, I wanted to fly another airplane. I also now had a goal of wanting to be an astronaut. I read the bios [biographies] of some of the early astronauts, and realized many flew different types of airplanes, and attended the test pilot school. So I felt I should switch airplanes again when I came back from Southeast Asia. I went to F-102 training in Texas and F-106 training in Florida.

Then from there I went to the 460th Fighter Interceptor Squadron in Klamath Falls, Oregon, at Kingsley Air Force Base. I flew F-106s for a year—really enjoyed it, and then was selected to the Aerospace Research Pilot School at Edwards Air Force Base, California. I really enjoyed the curriculum and enjoyed flying many types of airplanes.

One aircraft that was very exciting was the Rocket NF-104. This was a research airplane that had a rocket on it. You flew the aircraft above 100,000 feet and wore a space suit. At that altitude the sky was black, and the Earth looked curved. Two people who flew the NF-104 became astronauts—Roy D. Bridges, Jr. and myself. The Space Shuttle entry from 70,000 feet down was identical to what we were doing in the Rocket NF-104. I really enjoyed the Rocket NF-104 at Edwards.

In 1972, “Buzz” [Edwin E.] Aldrin [Jr.] returned to the Air Force, as the Commandant of the school. So I got to know him, and I told him I wanted to be an astronaut. Buzz

recommended I stay at the Test Pilot School and teach in the Rocket NF-104 airplane. So I became an instructor at the school.

In 1973, I volunteered to fly with the Royal Air Force in England. So I went over there and was a test pilot with them at the Aeroplane and Armament Experimental Establishment in Boscombe Down, United Kingdom. It was really fun flying all the British aircraft, the Harrier, the Lightning, the Jaguar, the Hunter, the Jet Provost, the Hawk, and the Buccaneer.

Our time in England was the best three years of our lives, except for right now. My wife and I think we have the best years right now. But even up until probably seven or eight years ago, we would say our time in England was the best three years of our lives, because I could get up in the morning, we could eat breakfast together as a family, and then I went to work at nine o'clock in the morning. By five o'clock in the evening I was home. That was really nice. I got to fly airplanes, and we traveled around Europe a lot.

In 1976, I came back to America. I had to work again. The Air Force assigned me to attend the Air Command and Staff College [Maxwell Air Force Base, Alabama]. When I graduated ten months later, the Air Force thought I ought to go work in the Pentagon [Washington, DC]. I wasn't excited about a non-flying job. I went and then ended up loving the Pentagon. I had a very good job there working on tactical aircraft force structure. I spent fifteen enjoyable years in the Air Force. They had promoted me to a full colonel.

But then I left them, because NASA selected me in the 1980 astronaut group. So I remember when I left the Air Force, it was hard, because I really loved the Air Force. That is a quick summary of my Air Force career.

ROSS-NAZZAL: You sure moved around a lot. Can you tell us about the selection process in 1980 that you went through, and the interview and the application process itself?

BLAHA: Yes, it's probably—I mean, you're going to hear that same story from everybody in that. I'm sure in the '78, '80, '84, '85 group people, it was the same, so you're going to hear it the same. But I'll tell you a little bit about it.

In 1979, NASA announced they were going to hire astronauts. The Air Force picked thirty people and sent the list to NASA. NASA then invited us to a one-week interview at the Johnson Space Center. My interview at NASA was in April 1980. In May, I think, or early June—I had a phone call from George [W. S.] Abbey. He said, “John, do you think you want to be an astronaut still?” I answered yes.

Mr. Abbey then said, “Well, you were selected.” I was really excited to hear I was selected.

ROSS-NAZZAL: What was your family's reaction when you found out?

BLAHA: They were ready to go to Houston. It would be like it was at Edwards Air Force Base testing machines.

ROSS-NAZZAL: Why don't you tell us about the training that you underwent as an AsCan [Astronaut Candidate] when you arrived here.

BLAHA: I really enjoyed listening to the Mercury, Gemini, and Apollo crews brief us on their space missions.

ROSS-NAZZAL: How neat.

BLAHA: Yes, that was like really neat. At that time, it was like wow, you get to sit here and listen to these people you heard about a long time ago who flew these missions. I thought that was really neat. I also enjoyed traveling with my astronaut group.

ROSS-NAZZAL: I also understand that your class was called the Needless Nineteen. Do you recall that?

BLAHA: No, I don't. Who told you that?

ROSS-NAZZAL: Dave [David C.] Leestma.

BLAHA: Dave Leestma? Did you talk to him? He's a good guy. Whatever he tells you is good. He's one of the finest human beings I've ever known. Dave Leestma. I really like him. Haven't seen him in a long time.

ROSS-NAZZAL: He's still over at JSC, as far as I know.

BLAHA: He's a fantastic human being. He's going straight to heaven when he dies. I think he's the only man I can say that about. He will spend less than one second in purgatory. [Laughter]

ROSS-NAZZAL: That's a nice compliment.

BLAHA: He's really a nice man.

ROSS-NAZZAL: Any other anecdotes or stories you recall from training?

BLAHA: No, not really. I mean, we did our normal study, and we liked it. Everybody was happy. It was a lot of fun. I mean, I don't remember any particular things. I remember Bill [William F.] Fisher always had a lot of good jokes that he would tell. On our trips he was always telling some kind of doctor jokes. Have you ever heard doctor jokes? You're a doctor, but not a medical doctor.

ROSS-NAZZAL: Yes, not a medical doctor. He's a medical doctor.

BLAHA: What area are you a doctor in?

ROSS-NAZZAL: In history.

BLAHA: In history. If you have a bunch of history doctors together, do you all have some doctor jokes?

ROSS-NAZZAL: I don't think so. I think they're mainly about students and grades and things like that.

BLAHA: Medical doctors, man, I couldn't believe listening to Bill Fisher and some of his stories. Are you going to interview him?

ROSS-NAZZAL: He's on our list.

BLAHA: You could tell him when you see him, just say that John said you had some very interesting medical doctor jokes. [Laughter]

ROSS-NAZZAL: We'll have to ask him if he'll put that on the record.

BLAHA: Okay, that's all. So I remember Bill Fisher's jokes. But the most important thing was being able to sit and listen to an Apollo astronaut crew tell you about their mission. I thought it was pretty exciting.

ROSS-NAZZAL: Very. You were onsite when STS-1 launched. Did you have any responsibilities for the mission?

BLAHA: STS-1; what was I doing? We all were doing different little things. What was I doing? Oh, I was down at KSC [Kennedy Space Center, Florida] helping out in the family area, and the

only reason I remember, now that you say that—I thought I wasn't going to remember for a minute—but the only reason I remember is because I remember on the loudspeaker, “Joe [H.] Engle is now making another pass in his T-38 to make sure that the runway is safe.” So I had to be down there if I was hearing that. [Laughs]

ROSS-NAZZAL: So what were you doing with the family at that point?

BLAHA: I was called an extended family escort.

ROSS-NAZZAL: Did you get to see the launch?

BLAHA: Yes.

ROSS-NAZZAL: What did you think?

BLAHA: Oh, I thought it was pretty incredible. I mean, anytime you went down there and saw even the vehicle and climbed in the vehicle, you were pretty excited, thinking, “So when do I get on? Why are these guys wearing glasses launching in the Space Shuttle? They're old.” That's what I was really thinking. [Laughs]

ROSS-NAZZAL: I'm glad you're sharing this stuff with us. I understand you worked on the Orbiter Head Up Display. Can you tell us about that?

BLAHA: Yes, that was a fun thing. I had worked on a Head Up display in the Air Force on the A-7 aircraft and I worked on the Head Up Display in the Jaguar with the British. Therefore, when I came to NASA, it was a natural fit that I'd work on the HUD [Head Up Display]. The biggest challenge on the Head Up Display in the Space Shuttle was the older established astronauts had not flown military aircraft with a HUD. Now, the younger guys, the '78 and the '80 group pilots had all flown aircraft with a HUD. There was some resistance to the HUD from the older astronauts. But, I had a lot of fun with the HUD. I liked working on it, and I liked working with the company in California who was doing it for us and getting it into the Orbiter.

ROSS-NAZZAL: Who else was working on that with you?

BLAHA: The guy who was first working on it in the '78 group was Dave [S. David] Griggs. He left the HUD assignment before it got into the Orbiter, and unfortunately when I saw it, I felt it was too cluttered—displayed too much information.

ROSS-NAZZAL: Can you tell us about changing that? What changes did you make?

BLAHA: Well, to me it had too much data on it. It only needed four or five very important things on it.

ROSS-NAZZAL: You mentioned that you worked with a company in California. What company was that?

BLAHA: I don't remember.

ROSS-NAZZAL: We can research it. We can always add it later, too. What sort of work did you do out in California with the company?

BLAHA: Oh, that was very important, because they were the people who were actually making the HUD. When I first discussed my suggestions with them, I smiled because they said, "John, what you're telling us is you want this display more like an F-18 HUD."

And I said, "Yeah, you could say that."

And they said, "Well, we tried to tell your people that a couple of years ago, but they wanted all this stuff on it." Anyway, it was sort of funny.

But the fundamental problem that I ran into with the Space Shuttle HUD was the senior flyers in the Astronaut Office were not familiar with a HUD.

ROSS-NAZZAL: Did you ever take any of those flyers up on the STA [Shuttle Training Aircraft] and show them how it worked?

BLAHA: Yes. I had them evaluate the HUD in the STA. Dick [Richard H.] Truly and John [W.] Young were the two people who I thought really ended up liking the HUD with a small subset of information. Then, of course, once they liked it, making the format change on the HUD was easy.

ROSS-NAZZAL: So when was the HUD first put on the Space Shuttle then and actually used in a mission?

BLAHA: On STS-6, the version with too much information flew. Dick Truly flew with the new version on STS-8 version. I think all astronauts felt the simple version was a useful tool.

ROSS-NAZZAL: You mentioned STS-7, and we know that you were CapCom [Capsule Communicator], actually, on STS-7. You were CapCom for seven flights. You want to talk about some of those experiences and your memories?

BLAHA: I really enjoyed my time as a CapCom. It gave me an opportunity to learn a lot about spaceflight. I was an on orbit CapCom on STS-7. On STS-8 and STS-9, I was an ascent and entry CapCom.

I really enjoyed working on STS-11, because Vance [D.] Brand was on that mission, and he was my mentor when I first came to Houston. We all had a mentor the first two or three years. So I really liked Vance, because he was always helping me out and trying to teach me stuff my first couple of years here. So now he was flying, and I was a CapCom, and so I really liked working STS-11 as an ascent, orbit, and entry CapCom.

On STS-12, they had an icing problem in one of the ports that expels water. I don't remember which it was, but it made an ice cone on the side of the vehicle, and because they couldn't dump water anymore, they were trying to figure out what to do to get it off. They decided to use the mechanical arm. Sally [K. Ride] had flown on STS-7, and she knew the mechanical arm real well. She also was a friend of Judith A. Resnik who was a crew member on

STS-12. So I thought we ought to have Sally come into the control center and explain the procedure to Judy Resnik. So Sally came in, and she told Judy the procedure to follow with the mechanical arm to remove the ice cone.

ROSS-NAZZAL: Smart thinking. Any other memories from any of the other flights?

BLAHA: CapComs, no. I mean, there are some, sure, but I don't want to drag it on.

ROSS-NAZZAL: All right. What do you think you learned from being CapCom?

BLAHA: You learned a lot about what was going on in the control center, which is a big part of any mission. A mission is a vehicle in the air and a control center and two teams working together, and I met a lot of the people that work there in the different disciplines, and that ended up being very useful when I became a crew member, because then I felt like I knew them and knew what was going on there versus sitting over in the simulator training. I thought that was very good.

ROSS-NAZZAL: You later were actually selected for a crew that didn't end up flying, 61-C which became 61-H. When did you learn you were selected for the flight? Can you give us a sense of that day?

BLAHA: I hadn't seen George Abbey for four or five years. I mean, I'd seen him, but we hadn't had a conversation, so then, I mean, there was like a long lapse of years, and in January of '85 I went up to his office, and he said, "Come in."

You walk in. You kind of knew what was going to happen, because people had told you. And he said, "So you want to fly on a Space Shuttle still?" Something like that. [Laughs]

And you said, "Oh yes."

Anyway, so he said, "Well, what do you think, if you're the pilot of this flight, 61-C?" or whatever it was.

And I said, "Oh, what do I think of it? It would be wonderful."

And he said, "Are you sure?"

"Oh, yeah."

"Good. Well, what do you think of these crew members on it?"

"Oh, I think they're all wonderful people." [Laughs] Anyway, it was that kind of a meeting, and then you were happy, of course.

ROSS-NAZZAL: Were you in the office by yourself, or were your other crewmates there?

BLAHA: No. No, just with him. He did that, I think, one-on-one with people always, is what I think, unless he just did that with me, which I can't believe. [Laughs]

ROSS-NAZZAL: Now, I understand that there were payload specialists appointed to this flight.

BLAHA: Yes, there sure were. Nigel [R.] Wood was the prime payload specialist, from U.K. The other person was Richard [A.] Farrimond from the British Army. Nigel was a Royal Air Force officer. Anyway, so I thought that was really neat, since I'd served with the Royal Air Force. I thought they were good, just because they were Royal Air Force. And there was a medical doctor, Pritawi Sudarmo, from Indonesia. She was the other prime payload specialist. We were going to deploy PAMs [Payload Assist Modules].

ROSS-NAZZAL: What did the astronaut corps think of the appointment of payload specialists to the crews at that point?

BLAHA: I thought they were neat people, myself. I really thought they were very, very talented people, any of the payload specialists that I saw, met, and worked with were very, very talented, sharp people. I thought they brought a lot to the missions.

Then, of course, later, when I had our crew—there was a large crew much later on STS-58; boy, we had very, very talented payload specialists. I mean, they were so sharp I couldn't believe it. So I really thought they were good. My answer is I thought they were good.

ROSS-NAZZAL: How long did they train with the crew?

BLAHA: We didn't train very long, and something happened. I don't remember what. I have no idea, and it's not *Challenger* yet. For whatever reason, our payload was changed, and I honestly don't remember what occurred, how that occurred when we lost our two payload specialists.

ROSS-NAZZAL: You mentioned *Challenger*. Where were you when the *Challenger* accident happened?

BLAHA: I was out at Base Ops [Operations] at Ellington [Field, Houston, Texas], getting ready to fly in a T-38. As soon as the *Challenger* launched, I was going to walk outside and fly down to Kennedy [Space Center], and they were going to put some data tapes in the backseat of my T-38, and I was going to fly it back here. That was my job on the *Challenger* flight, so I was literally standing out there. I saw the launch on television.

ROSS-NAZZAL: And after you saw what had happened on TV, what did you do? Did you go back to the Center?

BLAHA: Yes, but I knew it wasn't good. It was like wow, this is very bad. This is not going to be good. This is bad. I felt sorry for the families on board. I'd known Dick [Francis R.] Scobee at Edwards. So that wasn't good. From a family viewpoint, you felt bad about everything, but you also were concerned about what did this mean to the future of you flying in space. I mean, there's no question those were of equal weight. Of course, Mike [Michael J.] Smith was on there. He was from our group. Anyway, *Challenger* wasn't real good.

ROSS-NAZZAL: Did you have any thoughts about leaving the astronaut corps?

BLAHA: No. Not because of the accident.

ROSS-NAZZAL: What were some of your assignments after the *Challenger* accident?

BLAHA: I thought I had a good assignment. I went out to California to work with the Marquardt Division of the CCI Corporation who make the reaction control jets. I worked a lot with them to mitigate a burn through failure mode on the reaction control jets.

ROSS-NAZZAL: I understand you were also working on the development of contingency abort procedures.

BLAHA: Yes, I worked on that a lot. Actually, Vance Brand had got me started on ascent aborts in '81. He had said, "John, we have too many people around here that are all interested in the entry, because that's like an airplane, and we need someone to really work on ascent." Vance was the one who got me going on ascent development. So I was working on ascent and ascent aborts as a first assignment after '81 when I stopped being an AsCan. And that became kind of interesting.

Then, of course, after *Challenger* a whole level of interest went into it, so I worked an awful lot on contingency abort procedures, and that was really fun. I liked that that, because to me that was like being a test pilot with an airplane. You were working on flying maneuvers to make the Shuttle and/or crew survive if you lost one engine or two engines or three engines, anywhere in powered-flight ascent. So that was actually really fun, rewarding work.

I worked a lot at Rockwell [International Corporation], because there were a lot of structural implications, flight control implications, and thermal implications. I needed a lot of engineering teams to do a lot of work to validate if particular trajectories were, in fact, safe. Just

because you're flying them in a simulator doesn't mean the real vehicle could fly there. So that was really exciting. I could give lectures on that subject for two or three years in length, probably. That was a lot of fun, and I really enjoyed it. Ascent powered-flight contingency abort procedures was something I really enjoyed working on and doing.

Then when I got to be on a crew, of course, I always felt very comfortable in that area, and I always thought other crew members in general didn't get enough training in it, and I felt they never felt totally comfortable with it. Fred [Frederick D.] Gregory, my commander on STS-33, said once, "You wrote the document on it, John, so I figured you must know it."

ROSS-NAZZAL: Were there any other astronauts who were working on this project with you?

BLAHA: We had plenty of other people who would fly test runs and things, but I was the guy working contingency aborts. I'm trying to think of the one engineer here who was working with me. He was a good guy, worked in the Mission Ops Directorate. I wish I could remember his name. Right now I can't.

ROSS-NAZZAL: We can fill it in later.

BLAHA: He was good. I had been working with him since '81, so when this assignment happened in '86, we started working together again.

ROSS-NAZZAL: You talked about working out at Rockwell doing some of the testing. Did you ever conduct tests with the STA?

BLAHA: No, because the STA is in a flight regime nowhere near any of the flight regime of contingency aborts. An example of a contingency abort is if you are traveling at 11,200 feet per second on ascent, and if you lost two engines, well, you'd take the Orbiter and immediately just stand it on its tail. You're going this way. [Demonstrates] You see, you're upside down, so you stand it on its tail this way. This is the maneuver we ended up developing that you could survive. And then you roll it 180 degrees that way, and now about the time you started to sink, you push over and jettison the external tank. There's a whole lot of structural and thermal implications with this maneuver. That's why I needed those engineers.

Then you'd hit the atmosphere, and you would build up to three Gs, and then you would now hit the normal entry corridor. Whatever you did, you were trying to get to the entry corridor somewhere, intercept it. For example, if you're doing 18,000, you want to get to the entry corridor. If you're at this 112, you want to hit the entry corridor. Because once you hit the entry corridor, and let's say you hit it at Mach-8, well, now you're in the chute that you know all about. Whereas the STA only flies at subsonic speeds and altitudes below 40,000 feet.

ROSS-NAZZAL: Did you ever do any work with Steve [Steven R.] Nagel, for instance, who was developing those crew abort procedures to work in conjunction with—

BLAHA: For the bailout. You're absolutely right. He and Jim [James P.] Bagian were working the bailout piece of that, and that became critical, because there were lots of the contingency aborts that you would end up in a glide, and at 30,000 feet start using Steve Nagel's bailout

procedures. If you couldn't get the Space Shuttle to a runway during a contingency abort, you now were going to use Steve Nagel's bailout system.

ROSS-NAZZAL: How did that complicate your simulations?

BLAHA: It didn't. It didn't at all. In fact, it was a savior, because it meant that if you couldn't get to a runway, you could still have the crew survive, which was very important. So anyway, what he was doing and what I was doing actually met and complemented each other and made something complete that wouldn't have been complete without each part. I didn't really work on anything to do with bailout; Steve and Jim Bagian did.

ROSS-NAZZAL: If you could generalize here for us, how do you think that the *Challenger* accident impacted the Astronaut Office?

BLAHA: Wow, it was pretty bad. I mean, it was a big downer. I remember it was just a big downer. It tore my heart out. I couldn't believe it at the memorial service when I saw Crip [Robert L. Crippen], water just pouring off of his face, he was crying so much. It just killed me. I mean, really, I remember, that killed me. And Guy [S.] Gardner, who I really like. There were some people who I know who, wow, they looked like they had a waterfall on their face. That doesn't happen often in your life. So it was a bad thing, *Challenger*. I thought it was a real bad thing.

And then, of course, you worried about—I mean, once you got over that part of it, you started going, wow, what's this going to do to your life and flying? When we first came here,

they told us, in 1980, that there was some probability that you're going to lose a Space Shuttle and a crew, and I think it was something like one in fifty—I don't remember. If someone tells you a different answer, I'd like to hear it, so my answer could be wrong. But it could have been something like one in fifty flights, we're going to lose a Space Shuttle, and we're going to either lose it in ascent, because that's the most risky time, or we're going to lose it on entry, because that's the second riskiest time frame.

So when the *Challenger* tragedy occurred, I thought, "Well, they told us this was going to happen. At least they told us the truth, so you can't fault anybody for that." As it turned out, the *Challenger* tragedy made the Space Shuttle safer, because Dick Truly, the Administrator at the time, did something that was brilliant. He said, "Look, we all know the booster caused this accident, and we're going to fix the booster. But I'll bet you there are twenty other things in that spaceship that were ready to cause an accident. They just didn't happen first."

So Dick Truly said, "We're going to go through everything and look at everything," because we have never flown a reusable space vehicle before. When we looked at everything, we discovered many potential problem areas. For example, the AC motor valves, the reaction control jet, the software that would cross-feed propellant in the aft pods, the brakes, and all sorts of things. We were ready to have an accident in the Space Shuttle in many places, so what Truly did turned out to be brilliant. All of those pieces of hardware were redesigned, rebuilt, and tested and put in all the Orbiters. When STS-26 flew, although the Space Shuttle looked the same, it was a totally redesigned Space Shuttle.

So to me, *Challenger* occurred, but out of it came a very safe Space Shuttle. We got a second-generation vehicle. I thought that was pretty neat. And, of course, that proved out. The Space Shuttle flew eighty-seven missions before we had another problem. I think this is a

compliment to the engineering team that did that. Because, you know, astronauts, we're just operators, but the engineering team are the people who really figure out how to solve those kinds of engineering problems, and they did a tremendous job.

ROSS-NAZZAL: You mentioned this attention to safety and detail. You were actually a pilot for the simulated Shuttle mission before STS-26 flew. Can you tell us about that simulation?

BLAHA: Well, our crew was lucky. About two months after the accident, we were assigned as a prime crew to train for a simulated June launch. The idea was to keep the whole training system running. In June, we had a two-day simulation mission. Then we actually went back into training again, once they decided STS-26 was going to be a TDRS [Tracking and Data Relay Satellite] flight, we then started to train on the STS-26 training load. As a result, when I launched on STS-29, I felt very prepared. I felt like when I launched on STS-29 that I'd been through my third training flow, which meant I really felt very comfortable.

ROSS-NAZZAL: Any interesting anecdotes that you remember from those training sessions?

BLAHA: One thing that was disappointing was that we lost Anna [L.] Fisher, and I never understood that. Originally she was the MS [Mission Specialist]-2 on that first assigned crew, and I really liked Anna. We had become good buddies, and I really liked working with her.

Approximately a year before our real launch in '89, I was on a PR [public relations] trip in New York, and I got a phone call, and I was told, "John, I just wanted to call you because,"—I

think it was from Dan [Daniel C.] Brandenstein—"I just wanted to call you, because your crew has been announced for this STS-29 mission, and Anna is not on the crew."

I never understood this change. I remember that was a big downer to me. It should have been an upper, because I was being told I was assigned to a crew, STS-29, that would launch in March 1989. But it wasn't.

ROSS-NAZZAL: How did it change the dynamics of the crew?

BLAHA: A lot. A lot.

ROSS-NAZZAL: Can you give an example?

BLAHA: Well, it really changed it a lot, because I thought the crew that we had was working well together. We had had four military academy people on the crew and Anna. Mike [Michael L. Coats] was from the Naval Academy [Annapolis, Maryland]; I was Air Force Academy; Bob [Robert C.] Springer was Naval Academy. [James F. Buchli was from the Naval Academy.]

Anna was the MS-2, and I used to smile going through the training briefings (the simulators and the debriefing) because there was no question, Anna was ten or twenty IQ [Intelligence Quotient] points above the other three of us. Because she would sit there, and I could tell by her eyes when someone explained something to us, she knew within about ten seconds; she had it. We were all scratching our heads, and maybe fifteen minutes later we would catch up. You could tell by her expression, but she was so nice about it, because she wouldn't say anything.

Or you'd be doing an ascent simulator run, and you were performing a procedure, and you'd hear a little voice whisper—so she'd like move the microphone; not over the intercom [intercommunication system]—"John, do this switch now." And that was her, just trying in a very nice way to tell you you've got to do this now or you're going to screw it up. I learned whenever I heard that, just do what she said, don't try and ask why. That was really good.

I came to really like her. She was a very smart woman who was a real, I thought, strong part of that crew. That's why it bothered me or hurt me a little bit when I got that phone call. It took me a while to get over that. I don't know how long, but it took me a while. Probably six months to even a year. It took me a long time to get over that. That was a downer.

ROSS-NAZZAL: Why don't you tell us about the crew of STS-29 and the crew that actually did fly, and talk about the crew relationship and the dynamics.

BLAHA: We had two '78 people, Mike Coats and Jim Buchli. We had three '80 group people, Bob Springer, Jim Bagian, and myself. We were like two groups of people. Anna was the one who formerly had integrated us, and she was now gone, and we were like two groups of people. But we were a good crew, and we had a very good mission and did well. But I thought we were two groups of people.

But we had a good mission together. I enjoyed flying. I remember I really liked Mike Coats in the '78 group, so flying with him, I was happy. I remember when he was a pilot on 41-D and I was a CapCom, and we worked well together there. So I liked that, and we had a very good enjoyable flight. I remember the only thing bad about it was about a week before launch, Crip came in and sat down with all of us, and he said, "Listen, the only thing y'all are doing on

this flight that's important is launching that TDRS. We may just bring y'all down after four days."

I said, "What do you mean, you may bring us down?"

He said, "Well, you know, we want to get the Orbiter back, so we can get it ready for another flight."

And I thought, "You want to save one or two days? You've got to be kidding me." Anyway, I remember that, because that was not good. I wanted to maximize my time in space, not shorten it.

The other thing I remember about STS-29, all of your training, in all of the debriefings you listen to, you're listening to all these people talk about space adaptation syndrome. So the only thing that was an unknown to me on that whole mission was space adaptation syndrome, and I was wondering where am I going to be. I don't know why, but I was lucky. From the first millisecond that we were in zero-G, I never felt bad, and I thought, "I can't believe all this stuff I've been listening to, but I sure am glad I'm on this side of the wall."

Because I really enjoyed being in space. I'll never forget that. I mean, every time I flew, when I flew on that mission, when I landed, I remember I told my wife, "I really love you, but I'll tell you what. If they would let me, I'd run right over to that launch pad, and I'd launch in two hours and go again." And I felt that way every time I landed. I mean, I really like being in space. I don't know why. I felt better there. I actually felt better there than I do on Earth. Why, I have no idea, but I really felt good there.

ROSS-NAZZAL: You had mentioned training for this mission. Are there any interesting anecdotes that stand out from training?

BLAHA: Not that I remember. I don't know why I don't remember much about 29. We did the IMAX. We made an IMAX movie. I remember doing an experiment for a junior at Purdue University, a chicken-and-egg experiment. I remember doing that. But I mean, those weren't big highlights. To me, the big highlight was just zero gravity and looking at the planet and looking outside. I felt like I was on such a high that I never wanted to get off.

ROSS-NAZZAL: Your crew did a number of Earth Observation photos. Did you take any photograph that's one of your favorites from this flight, that you recall?

BLAHA: I can't say that I did. I mean, there are a lot of different space photographs. I actually like some that other people have taken. I mean, so I have maybe my favorites, whether I took it or someone else took it, and by that I even mean on another flight. I can't think of any. I used to like Earth Obs [Observations], yes, and I worked with the Earth Obs people a lot. Did a lot of planning for the mission, and like anything, if you plan and prepare, when you get there, you get more out of it if you put more into it ahead of time, and I got a lot out of STS-29 on the Earth Obs side. Oh yes, that was fun. I'm glad I prepared for it the way I did so that I could get the return. But I don't remember any particular thing. I mean, I could list a number of sights to you, but now that I look back, maybe they're not that important individually.

ROSS-NAZZAL: One of the highlights of this mission was the fact that the President actually called up and spoke with the crew. What are your memories of that?

BLAHA: Yes, I remember that. I remember that, March of '89. I guess we were the first Shuttle flight after his inauguration. What I really remember is at the end of it. I don't remember how it quite went down, whether Mike said something that almost invited us or what, but anyway, one way or the other, when George [H. W.] Bush said, "Well, y'all are going to have to come see me in the White House."

I remember that, and I thought, "Oh, that's really good." Because that was kind of like—did you see that movie, *The Right Stuff*? You know that one area in there where one of the wives says something to the effect of, "I can't wait until we go to the White House and see Jackie [Jacqueline Kennedy]," or something like that. Well, that was true of space flights. So now when he said that on orbit, it was kind of like, "Hey, we get to go to the White House and see George." [Laughter] That was a fun thing.

ROSS-NAZZAL: So after the flight, did you go to the White House?

BLAHA: Yes.

ROSS-NAZZAL: Can you tell us about that?

BLAHA: That was a fun thing. I mean, we went there, and I thought that since we were the first crew there that it was a little bit of a novelty to George Bush, so we had a real nice visit with him. I mean, better than my subsequent trips there, which now were becoming old hat to him. But yes, that was a lot of fun. I think we were there for a couple of hours with them. In fact, I remember we were up in their private quarters with him and his wife. They showed us their

puppies, and I mean, we were talking about a million normal family kind of things. So that was pretty special. I think we were around them privately two hours.

But again, we were their first crew, too, so that had something to do with it. And later, after other flights, when I went up there, I noticed that it was becoming old hat to them now. It wasn't a new thing. But they were nice people.

I was surprised on entry on STS-29. I was a little surprised.

ROSS-NAZZAL: Can you talk about that?

BLAHA: Yes, I would just say that what surprised me was time compression, and why I have no idea, but from the time we did our de-orbit burn, we were on the runway, in real time, one hour later, it felt like it was five minutes, and why, I have no idea. Because I thought I was very prepared, but it was a huge time compression. It just went by like that. [Snaps fingers.] And you almost wondered, "What did I see? What was this instrument reading at this time?" And I could hardly remember it, which meant that I was way behind the ball. I think I was riding it, not involved with taking care of it. So I remember that. I remember time compression, significant time compression.

Then at the end of the flight, I was wondering if I was going to have any problems. For whatever reason, it was like going and getting in my car and driving over here and then getting out, which really surprised me, but I was really happy.

ROSS-NAZZAL: What are your memories of getting out of the Space Shuttle and seeing your family?

BLAHA: My number one memory is, I already told you, the first thing I told Brenda, “Brenda, I love you, but if I could, I’d go right back out to that launch pad and launch right now again.” That’s how much I enjoyed being in space. That’s the number one thing I remember. She would tell you that, too, if she were here.

ROSS-NAZZAL: What was it like those first couple of days being back from space, other than wanting to go back?

BLAHA: My number one desire was to get reassigned to a crew and get back into orbit. And of course, we were only on a five-day mission, which isn’t like it’s some great separation, because it’s not. I mean, what’s five days? It happens to people all the time here, right?

ROSS-NAZZAL: Besides going to the White House, what other trips did you take after this flight was flown?

BLAHA: I went back to my hometown in San Antonio [Texas]. They had a couple of things there, a couple of big parades. The Battle of Flowers Parade was one. I also went to Granby High School in Norfolk, Virginia, where I graduated in 1960. I was the graduation commencement speaker. I went back to the Air Force Academy and spoke to cadets. I went to the athletic awards dinner in June. So a whole lot of things happened like that. They were kind of fun, because you were going back to places that you had been at.

Then I got reassigned in July to a new crew, so it sort of just stopped the public appearances very quickly.

ROSS-NAZZAL: Let me just go back and ask you just a couple of general questions about the flight.

BLAHA: Anyway, that got going for a little bit, and then it was like it was completely interrupted, and everything had to be canceled that was planned when I was reassigned to that STS-33 crew. But I wasn't unhappy about that, but anyway, I remember that.

ROSS-NAZZAL: I can imagine you were pleased.

BLAHA: I was very pleased. Go ahead, back to—

ROSS-NAZZAL: When you were on board the Space Shuttle in flight, did you have a chance to fly the Orbiter as the pilot?

BLAHA: Yes. On entry, of course, I think it was a pretty normal concept that the commander would, at some point in the landing phase, say, "You got it," and you'd fly it for, I don't remember, five or ten seconds, whatever it was, and then give it back to the commander and he'd fly it. So I did that, and when I did it, I thought, "Gee, this feels just like the STA." That was the biggest value of it, for you to realize that your STA training was very, very good.

But the biggest thing I got out of that flight, that surprised me, was the time compression the last hour prior to landing, which really helped me prepare for subsequent flights. I realized I had to think more about that last hour so I was more prepared, because if you're more prepared, that doesn't happen to you. As it turns out, by the time I flew STS-58 on entry, I felt like I was driving my car over here today. I mean, everything, the world in front of you, every bank angle, everything, I felt like I was seeing everything, and that was completely different than STS-29. When STS-29 was over, I felt I hadn't seen anything.

ROSS-NAZZAL: Do you remember the day of launch? Do you have any memories or recollections of that day?

BLAHA: I think so.

ROSS-NAZZAL: Do you want to share those thoughts with us?

BLAHA: The biggest thing I remember was that we were in an extended launch hold. Mike Coats had a very bad backache. So he finally decided he had to unstrap, because we were being delayed for such a long time. We ended up laying on our backs, I think, very close to the five-hour limit before we launched. So Mike unstrapped and actually then was, instead of in his seat this way and laying on his back, he was laying on his side this way. [Demonstrates] And then he'd lay on the other side. And then he got strapped back in.

I mean, there are really absolutely hilarious things that you see. Something happens in space to people. There's something psychological—people can change. When they're in zero

gravity, they can be a very different person than they are here on the ground, which to me is really interesting. And I remember, I wondered about that after my first two flights, and I remember telling one of the flight surgeons. When I was done with my debrief on STS-33, I asked, “Who else gives you a debrief like me?”

And they told me, “Shannon [W.] Lucid.”

And I said, “Is that right?”

And they said, “Yeah.”

And I said, “Oh, okay.” You’ll see why I wanted to know this here in a minute.

Then, I don’t know, six months later or whenever it was when I got assigned to STS-43, and Shannon was on my crew, I was elated, because now I knew there was a human being who gave a debrief like me. So I went to Shannon early in our training, and I said, “Shannon, when we get on orbit, and we’re there for a day or two, I want to get together with you, and we’re going to have a discussion, and the real bottom line is, I want to know from you, have I changed? Yes, or no? Or am I the same? And then I’ll tell you what I think about you.”

Now I’d have a baseline, and from that baseline, that would have a lot to do with whatever I was observing and thinking about other people. That turned out all to be good, because she was telling me, “No, you haven’t changed at all,” and I was telling her, “No, you haven’t changed at all.”

Yes, there’s a psychological shift that occurs with people in orbit, which is real interesting.

ROSS-NAZZAL: A positive change or negative?

BLAHA: The change can be in either direction. I'm going to call it an unknown direction. But when you see that, someone you've been training with for a year and a half, two years, and it's like this face is talking, but they're not the same person, which is really weird.

ROSS-NAZZAL: Interesting.

BLAHA: It was really weird, but I remember after my second flight, I did, I looked at whoever the flight surgeon was debriefing me, and I said, "I got a very important question. I want to know who gives a debrief like me." Then when I got to fly with Shannon, that was good. Then we flew again on STS-58 together, so that was also good. I mean, when you have someone grounded with you, that helps. It helps you understand other things that are happening.

But there are a lot of funny things that happen on a space flight. I mean, really absolute funny things. In fact, Shannon and I, on 58, were laughing so much, the tears were coming out of our eyes, we were laughing so much. Sometimes we'd get together and just look at each other and just laugh so hard.

ROSS-NAZZAL: I think next time we'll look forward to some of those stories, because this is about the time we should end our interview today.

BLAHA: I know, but I probably shouldn't tell you those stories. That's why when you asked me what to talk about, I know that it wouldn't be fair to other people, and I don't like to do that. But anyway, they are funny. If I can think of any that are okay to tell you, I'll do that.

ROSS-NAZZAL: That would be great, and we look forward to speaking with you next time about those flights.

BLAHA: Okay.

ROSS-NAZZAL: Thank you.

[End of interview]