

**NASA JOHNSON SPACE CENTER ORAL HISTORY PROJECT
EDITED ORAL HISTORY TRANSCRIPT**

ROBERT L. GIBSON
INTERVIEWED BY JENNIFER ROSS-NAZZAL
HOUSTON, TEXAS – 14 OCTOBER 2020

ROSS-NAZZAL: Today is October 14th, 2020. This interview with Hoot Gibson is being conducted for the JSC Oral History Project in Houston, Texas. The interviewer is Jennifer Ross-Nazzal. Thanks again for flying out and taking some time to meet with me this morning. Appreciate it.

GIBSON: I'm glad we finally fit it all together. I'd been looking for an opportunity when I'd be over here and wouldn't be tied up during the day, so instead of coming over late in the day today I caught the first flight out. Yes, that was great.

ROSS-NAZZAL: Great. We can catch up. I thought we'd start by talking today about becoming chief of the Astronaut Office. How did that come about?

GIBSON: That happened right after STS-47, which was my fourth mission, third time as mission commander. At that point, I was the most experienced pilot astronaut in the corps. One of the astronauts, or maybe even more than one, had told me even I guess right before STS-47, "Rumor has it you're going to be the next chief." I think it was Jim [James F.] Buchli that told me that. He was acting chief at the time because Dan [Daniel C.] Brandenstein had left. We had had a couple of successive acting chiefs, but not a permanent chief.

ROSS-NAZZAL: Can I ask a question?

GIBSON: Sure.

ROSS-NAZZAL: Does that mean the chief of FCOD [Flight Crew Operations Directorate] selects you? This is not an open process? Or at the time it wasn't?

GIBSON: I believe it's chief of FCOD. I believe that's where it comes from. That was Dave [David C.] Leestma. I had worked very closely with Dave Leestma, because STS-47, Spacelab-J, Spacelab Japan, had been a complicated mission, so I had spent a lot of time discussing with him things that we were contending with and all the things that were going on. I think that probably had a role in him wanting to make me chief astronaut. In addition, I was the most experienced pilot astronaut at the time. We had never had a chief astronaut who was other than a pilot astronaut, and that was a given, I suppose.

After STS-47 and we did all of our postflight travel and our postflight appearances, I was tentatively going to pick up the job of Astronaut Office Safety Branch chief. Tentatively. We were the first ones to move into Building 4 South. That was just getting ready to happen.

I want to say it wasn't very long after we got back that I was notified by Dave Leestma. I don't remember if he said, "Come on over." He probably did. He probably said, "Can you swing by Building 1?" I went by Building 1, and he said, "Okay, you're going to be our new chief astronaut. The press release is going out today."

It was funny because that evening Max Q was playing I think at the—what's it called, the center?

ROSS-NAZZAL: The Gilruth?

GIBSON: Yes, we were playing at the Gilruth Center. The announcement had been made like at four o'clock in the afternoon or so, and the band was playing that evening. All of my fellow astronauts on the band were saying, "Golly, Hoot, you've never sounded better than this, you really are excellent." It's time for me to be their best friend, I can tell, because I'm going to be chief astronaut.

When I got notified, I came back to Building 4 South and I said, "I want to go down and see my new office." I walked into my new office, so I was the first chief astronaut to occupy that office in Building 4 South. It had automatic lights in the room. I walked in and the lights turned on, and I said, "Yes, I'm here, thank you," to nobody. But what a thrill that was to be appointed chief astronaut.

Dave Leestma—I'm remembering a little bit more of it now—he came over to Building 4 to make the announcement, so we called an all-astronauts meeting. At that time we were still in Building 4 North. We had not moved out of there yet. He came over to the big conference room on the fourth floor and made the announcement, and I remember I made a very short speech after he finished. There was a round of applause, I didn't hear too many boos, but there was a round of applause.

ROSS-NAZZAL: What did you say?

GIBSON: I stood up and I said, "Okay. I want all of you to know that I am going to be looking after you. Taking care of you is what I see as my job." That was my philosophy. It dates back to the Navy, because one of the things that the Navy really emphasized is that as an officer your primary job is to look after the health and the well-being and the welfare of your people, your men and women, that are in your squadron, in your command. I took that philosophy right from day one.

The first moment of jubilation when I was told, "Okay, you're chief astronaut," [I] was really really happy. Then right after that I had a moment of quiet almost terror saying, "I don't think I'm smart enough. I am not the smartest one in this astronaut corps. My astronauts are a whole heck of a lot smarter than I am. I don't know that I'm smart enough. I'm going to get them to tell me what to tell them to do." I used that philosophy from day one.

Something else was interesting. In my first two weeks in my new office, I basically inherited all the branch chiefs that were there, which was great, because they were excellent, excellent people. You could probably flip a coin and pick branch chiefs in the astronaut corps, because your average is so very good. Certainly we had a range of people, but the branch chiefs were all excellent.

My first two weeks, I really had a lot of work to do. Dave Leestma said, "Look. One of the things that you probably need to get working on right away is crew assignments and job assignments in the astronaut corps, because it's about time for us to come out with a new set of those." I remember back when George [W.S.] Abbey was FCOD, he did all that; he did all of it. Dan Brandenstein had gotten it established that as the chief astronaut he's going to do the crew assignments, and that certainly made sense. Of course I inherited that but also was doing all the job assignments, so I had a ton of work to do.

I had to look up when did people last fly, when are they coming due, what are their backgrounds. It was an immense job putting together crew assignments. I was slammed for several weeks. The other thing that was happening—I guess I can say, Jennifer, that'll be in the transcript—my branch chiefs were in my office constantly going, “Hey, boss, we have this issue, or we have this concern coming up, and we have this going on.”

My first question when somebody would do that when I was in a leadership position was, “Okay, what do you recommend we do?”

They would all go, “Huh?”

I'd say, “What do you think we ought to do about it?” People love that. People love to be asked for their opinion. They love to be asked for what the solution might be.

This was unrelenting, because what happened before, the chief had made all the decisions and didn't really empower his branch chiefs to be making the decisions. We would have staff meeting on Monday morning after the all-astronaut meeting, with my branch chiefs in my office. My office now was big enough that I could have branch chief meetings in there. I had this big round table in there. We'd all sit around the round table.

I said, “Okay, branch chiefs, henceforth from this moment on I want you to make all the decisions in your branch.” That does a whole bunch of marvelous things. One of them is it frees me up to get my job done. The other thing is when their members of the branch come to them for a decision, they make the decision. That increases their stature in their branch, because I really am the branch chief now. That pushes the decision to the lowest level.

I did say, “Okay, if you've got something really controversial or something really unprecedented then come tell me what you decided. Or come bounce it off of me if you want.

But I want you to be in charge of your branch.” That worked beautifully, because you’re not dealing with dumb people; you’re dealing with very sharp smart people.

In addition, when we’d be having some issue and we’d be discussing it at the table, I’d want to hear from all my branch chiefs, “What do you think we ought to do? I’m going to make the decision as the chief, but I want to hear from all of you what do you think we ought to do in this situation.” That’s called synergy, and that really works. That way I didn’t have to be the smartest one there, which I wasn’t. I could rely on them to help me make the right choice.

It’s funny as well because just recently I was reading about the pharaoh Akhenaton. I remember a quote of his, and I guess I believed in it even though I had never heard it until a couple weeks ago. As the chief astronaut, you could be an absolute ruler. Akhenaton, 3,400 years ago, said, “The danger of being an absolute ruler is that no one dares tell you that what you have just decreed is not a good idea.” I didn’t realize it, but I was a believer in what Akhenaton said. I want to hear from everybody. Yes, I’m going to make the decision, but I want to hear from everybody, and therefore you get all the right inputs to do it.

I felt like okay, I can handle this job, I can be the chief astronaut, because I’m going to have such good input from all of my astronauts. What did I have? I think I must have had 20 PhDs, about 35 people that had masters’ degrees—and I only have a bachelor’s degree—and 32 highly experienced test pilots who were my pilot astronauts.

I had another meeting, not every week, probably once a month, called “Commanders Call,” where I would just get together with all my mission commanders. That would be helpful for them too because some of them, of course, are a mission commander for the very first time. It helps us discuss the kinds of things that we’re all contending with. That worked really well as well.

ROSS-NAZZAL: Is that something you established or was that something John [W.] Young had had and other folks had had?

GIBSON: John Young didn't have it. Honestly I don't remember now whether Dan Brandenstein had done it. Maybe he did towards the end of his time, so it was something that I continued.

One of the things I instituted—there was a common complaint out there in the Astronaut Office. “Complaint? What do you got to complain about? You're in the best job in the world, what do you mean complaint?” But there was. There was a common complaint, and it was, “We never know where we stand. Nobody ever tells us where we stand.” You assumed that okay, if you got assigned to another mission you must be okay. But nobody ever told you where you stand.

I talked to the schedule writer, Tom McClure, and I said, “Tom, what I would like to do is in the space of a year I'd like to have a one-on-one with every one of my astronauts.” I had 113 astronauts at the time I think.

ROSS-NAZZAL: Boy, I didn't count.

GIBSON: Yes, I think that was the number that I recall that I had. It was really cute, Jennifer, the way it would go on the schedule is, “One-on-one with number one.” That was cute. One of my smart astronauts said, “It says one-on-one with no one.” But yes, he put it on the schedule as, “One-on-one with number one.” He'd block half an hour, and we'd go into my office, close the door. If they had any complaints for me—and I encouraged them to talk to me. If I had

feedback for them good or bad, I would give it to them, because it isn't fair for you as a leader to be holding something against somebody that they don't know that you don't like about what they're doing. You need to tell them about it and give them a chance to fix it. It isn't fair to continue to hold something against somebody all their lives because you've never told them. If you don't have the gumption to tell them then you're not a good leader.

Is that tough? Oh yes, it's tough. It's tough on them, and it's tough on me too. But you owe it to them. I had some really brilliant success stories. I had one astronaut that I said, "When you talk to people, you are too rough on them. You're always right about what you're pointing out, but I just wish you could make it a little more gentle the way you tell them." You could tell that this was tough on him, but he said, "Okay." I got to tell him a year later, "You did just exactly what I asked you to do. You are one of the best I've got. Keep it up. You are just doing great." There are some great successes.

I've also had some tears. When one of my astronauts would tear up, it would make me fight not to; it would be tough. But you owe them that. This dates back to my time in the Navy. I did well in the Navy. Frequently in a squadron I was number one lieutenant, j.g. [junior grade]. I was number one lieutenant in the squadron. The debrief that I vividly remember was [when] my F-14 Tomcat squadron skipper, Denny Strole, finished telling me how great I was, and then he said, "Now let me tell you how to be even better." He told me what was wrong with me, and I knew what was wrong with me but I thought I was just getting away with it. That's the one debrief that I vividly remember.

I think that's a characteristic of a good leader, to be ready to tell your people how they can improve. Now do it gently. I had one astronaut that I said, "You are not usable to me as an astronaut the way you are right now, and here's why." It was because he would just do whatever

he wanted in the simulator. He was erratic. I said, “And here’s what you need to change.” You’ve got to tell them what you want. I said, “And here’s what I want you to change, here’s what I want you to do, and you’ve got to do this. If you can’t do this, I’m going to send you back to the branch of service.”

ROSS-NAZZAL: That’s a wake-up call.

GIBSON: “And that’s not what I want. What I want is for you to be completely successful.” Part of the story behind this one too is that I had a number of astronauts that come to my office and say, “Boss, I’ll do anything you want me to do but please don’t make me fly with blank.” This person. He—there we go. I gave away it was a he. He needed to hear it, and he needed to be given an opportunity to fix it. I don’t remember counseling him again. So either it all got fixed, or I rotated out of the job before it was time for me to have another one with him.

But those are my philosophies about leadership and about what you owe to your people. Again, it was openness. They use the word transparency too much nowadays, but it was transparency.

I also had a philosophy that in our Monday morning meetings, in a roomful of all of my astronauts, if I can’t tell them everything that I’m doing on their behalf for them or to them, against them, or whatever, then I probably shouldn’t be doing that. If I can’t tell them to their face what it is, then that’s something I should not be doing. I don’t think I had anything like that.

ROSS-NAZZAL: I just want to clarify, because I work with civil servants, I’m a contractor. They do have a process where you have a yearly evaluation. We hear about it a lot in the meetings.

From the time you were an astronaut until you became chief of the Astronaut Office, you actually never had an evaluation? Or did you have an evaluation but you never sat with the chief?

GIBSON: We had Navy evaluations. I didn't do any of the civil service reviews, other than my one-on-ones with no one that I was doing. I didn't do those with the civil service employees. I don't know why that was, now that I think about it.

We didn't have one with the senior naval officer. The senior naval officer in the astronaut corps had the task of writing fitness reports. In the Navy they were fitness reports, the Air Force they were OERs, officer efficiency report or something like that. Those would get submitted. You'd never see them. I never saw them. I think they would get them all typed up and filed and send them in to the Navy and that was it.

I never had a review. For example when John Young [was chief]—he might have been out of the Navy by then, he might have been retired by that point. But anyway, never did have a review. Maybe it's because I was military, so that would make it different.

ROSS-NAZZAL: That's interesting. I'd never heard that before.

GIBSON: Oh yes. The senior marine would do the Marine Corps ones and so on. The senior Air Force would do the Air Force ones. All I know is what was done with the Navy. If the Air Force did it differently and they did an in-person review, I don't know about it.

ROSS-NAZZAL: There was someone assigned to your office who specifically was over each military branch?

GIBSON: One of the astronauts.

ROSS-NAZZAL: Okay.

GIBSON: It would be whichever of the astronauts was senior grade in the military. That's the person who had the responsibility for that. I was never the senior naval officer. There were always naval officers who were older and more senior to me. I never had that particular job.

ROSS-NAZZAL: You'll have to ask Rhea [Seddon], because Rhea was a civil servant. I'm curious. How did you handle—you were chief of the Office. You also have a spouse who is in the Office.

GIBSON: This brings up one of the funny stories that I tell every time I do a talk, or people will ask me. Usually the question is, "Did you and Rhea ever go to space together?" The real answer is, "No, we had our first child a year after we married, and you wouldn't put both of you on the same mission." Of course NASA wouldn't put a husband and wife intentionally on a mission, because there were too many questions the press would have and NASA didn't like anything controversial. The one husband-wife couple that we did have, which we talked about, during STS-47 happened because they became friendly and married in the course of their training.

When I was appointed chief, all of a sudden now I can't be Rhea's supervisor of course. What Dave Leestma did was he wrote up a piece of paper that said, "Effective today Rhea is to report directly to the director of FCOD," and not to me. The joke I like to tell is that people will ask me, "Did you and your wife ever fly together?"

And I say, "No, it just wouldn't work, because I was mission commander four times. How would this work? I'd say, 'Rhea, it's time to open the sunshields.' And she'd say, 'You want the sunshields open, you can just go open them yourself. Don't try and pull this mission commander stuff on me.'" That never happened.

But this did happen. We were eating dinner one night with the kids, and she brought up some issue that she was working on. I said, "Okay, well, you know what you need to do about that, you need to do this and this."

She said, "You can't tell me what to do, I don't work for you." I played along with it.

I said, "Yes, you do. I'm the chief astronaut; you're an astronaut, you work for me."

She said, "No, I don't, so don't even try and tell me what to do." It makes a real funny story.

She technically reported directly to Dave, even though she kept her same office over in 4 South. Anyway, that's how we handled the fact that Rhea was one of my astronauts.

ROSS-NAZZAL: And she was already assigned to SLS [Spacelab Life Sciences]-2, right?

GIBSON: She was already assigned to SLS-2, so I didn't have any part in making that assignment. That launched the middle of '93, and I got back from STS-47 in September. September 12 to 20 [1992] was that mission. I was probably assigned as chief by the end of

September, and she had already been training on that mission for a couple years. I never did wind up assigning her to a mission.

ROSS-NAZZAL: You got to avoid that sticky mess.

GIBSON: That was okay. Oh, and one of the things that we'll be coming to when we talk about the Mir docking, STS-71—immediately when I was named as chief astronaut *SpaceNews* wanted to do an interview with me. I remember they came to my office, and we did an interview. The question came up. They said, "Okay, the first Shuttle docking with Mir is coming up. Are you going to assign yourself to that mission?"

I launched off into a speech that was, "No, absolutely not, that is not the job of a leader, to skim off the good deals for yourself. The job of a leader is to take care of your people and give them all the good deals. I will not assign myself to the Mir docking." I was quite adamant about that. That plays into maybe starting to talk about STS-71.

ROSS-NAZZAL: I did have some other questions for you.

GIBSON: Oh, good, yes, I figured you probably had some things for me.

ROSS-NAZZAL: Loren [J.] Shriver was your deputy. Of course he was a classmate of yours from '78. What was his responsibility and role in working with you as deputy?

GIBSON: As deputy he was only in that job for a while, because he was looking to go down to the Cape to be the operations boss down there at Cape Canaveral [Florida], take the job that Brewster [H.] Shaw had been doing for several years. Loren was only my deputy, I bet it wasn't even six months. That's a guess or an estimate. He helped out somewhat with the job assignments in the Office and handling a lot of the day-to-day things that were going on. Then beyond that, I'm struggling to remember what the other things were that I had Loren doing. But he wasn't in it really that long. Then it was announced that he was going to leave.

Oh, and Dave picked him for me. Dave appointed me to be chief, and at the same time he said, "Okay, and I think Loren Shriver ought to be your deputy."

I said, "That's great," because I always got along great with Loren. He was on my chase team for STS-2 when I was the leader of the chase team. He is just rock-solid. He's as solid as they get, he's as good as they get. That was great; I didn't need to pick one.

When he was leaving, it was time for me to pick a deputy. Once again, Rhea and I were having a discussion at the dinner table, and she brought up something along the lines of, "Yes, okay, well, the chief and the deputy chief are both pilot astronauts. What kind of support do I get up in the top?"

I said, "Oh, really?" We had previously had a deputy chief who was a mission specialist, Steve [Steven A.] Hawley. Jim Buchli, I think, also had been deputy chief. But I had already decided to myself, "I want to make Linda [M.] Godwin deputy chief."

Rhea had brought up the subject, and I said, "Oh yes, so you have no sponsorship, no standing up at the head office." I was smiling inside because I had not yet announced that I wanted to make Linda Godwin deputy. I have to admit she was a little bit unsure of herself when I first talked to her about it. I could tell that she was a little nervous, a little reluctant. Kind of

like I was when I first found out I'm going to be chief, and I said, "I don't think I'm smart enough."

But she filled in, and she did fine. I'm trying to remember what I had her doing too. I think she had already been assigned to another mission, so she was deputy chief for a while, and then she had to go off to train for her other mission.

At that time we weren't going to have any more acting chief astronauts, but I said, "We can have an acting deputy." So Jerry [L.] Ross came in as acting deputy. He's virtually a hyperactive child. He is just so busy and so productive and so hardworking that he kept bugging me for more to do, and I said, "Okay, all right, I got a deal for you. How about if you take over all the job assignments in the astronaut corps? You can be in charge of making the job assignments." That was a big job as well, because again we had I think it was 103 astronauts, and at any one time we'd have six or seven or eight crews assigned, and so now subtract 42 or 45 people from that number. We always had more places where people would like to have an astronaut working with them full-time than we had astronauts to go around. We never had enough astronauts to go around. I did hand that off to Jerry, and Jerry Ross managed it from that point on for me.

The crew assignments, I really put a ton of time into those things, because those are really important, and you had to balance personalities. You had to look at personalities, because there were some that were oil and water. For the most part, everybody was great. For the most part, they were all easy to get along with, all hardworking people. In fact, that was one of the things when I first got selected with that class of 35 in 1978. I said, "You know what, everybody's different; they come from all different walks of life, all different backgrounds, all different

degrees. What do they have in common?" It took me about six months or close to a year to figure it out, "You know what, they're all easy to get along with, they're all easy to work with."

When I was chief astronaut and I'd brief the selection board, I'd say, "Okay, what are we looking for? We are looking for team players, that's what we're looking for. It's as simple as that, team players. We don't need the kind of astronaut that's going to bang on the table and say, 'No, it's got to be done my way; it's got to be this way.' We don't need that. We need people who can get along. As an astronaut you have way too much influence over the other people that we work with, and you can severely damage somebody in their career by being overbearing, so we're looking for that kind of person."

But nevertheless, I had to look at what does this mission entail, what are they going to do. I can't just write down seven people and say, "Okay, here's a crew." What are they actually doing? What are the degrees? What's their background? What's their college degree? What's their PhD in? Where does it fit the best?

What I would do is I would take all my paperwork down to the Cape when it was time for launch. Of course we were launching six, seven times a year, which was great, I loved it.

ROSS-NAZZAL: You were pretty busy.

GIBSON: I got to fly the weathership for the launch. Actually two weatherships, one of them being the STA, the Shuttle Training [Aircraft]. We would take off something like 2 hours before launch, and we'd be in the air through launch, or through scrub if that happened. I'd fly approaches to the runways and verify that there weren't any sudden wind shears or gusts.

One of the other things that I would do was at about 2:00 in the morning I'd take off in a T-38, usually by myself, because nobody else was crazy enough to want to be up at two o'clock in the morning. One of the things that the mission control team needed to know was, "Okay, we're seeing what looks like rain showers off the coast out over the water. We need you to go fly under these things and see if there's rain coming up," because we couldn't launch if there's rain within 30 miles.

I'd be out there at 2:00 in the morning. My wife was really annoyed at that, because I'm by myself normally in a T-38 in the dark dropping down to about 2,000 feet and flying under where they had radar returns to see if I picked up any rain on my windshield, out over that black ocean. There's nothing out there, there's no lights, there's no nothing. Fortunately I was a pretty good instrument pilot, and I never even crashed into the water. She had said something like, "You know what, if you disappear in the ocean out there I am going to be so mad at everybody over this."

Sometimes one of the Cape Crusaders, one of the Cape astronauts, would say, "Hey, can I go with you?"

I'd say, "Absolutely, absolutely, let's go." So I sometimes had another astronaut with me. I said, "Okay, the big thing I want you to do is watch altitude. I don't want to go below," I don't remember what the number was, probably 1,000 feet. I'd say, "If you see me at 1,000 feet I want you to sing out." That was a help.

But most of the time I was by myself, out at night, down close to the water, flying under rain showers. They weren't always rain showers because we couldn't launch if they were. Anything that was inside of 30 miles, they needed me to go fly under. It was funny, you can see

just fine. You could see just fine. I'd have my lights down low enough to where I wasn't blinded by my cockpit lights.

Mission control refused to believe that I could see well enough to tell them, "No, this isn't a rain shower," so I had to carry night vision goggles. I had a pair of early technology night vision goggles, because I guess that's all NASA could afford. Later versions, if you're looking outside and then you come back inside to the lights on the gauges, they would adjust to that. These didn't; these just had one level. But it was binoculars, so I had to just pick them up by hand while I'm flying the airplane. One hand is on the throttle, one is on the stick, and then my third hand has the binoculars.

ROSS-NAZZAL: Now I can see why Rhea was concerned. That's a lot [of juggling].

GIBSON: Launches were so much fun. I always took my crew assignments paperwork down there. I would spend hours—I'd go into one of the offices there at the crew quarters, because the crew, they'd be out at the beach house, they'd be doing things. Other than when I needed to fly or when I needed to attend the last-minute FRRs [flight readiness reviews], I'd be working on crew assignments, because it was a huge job.

Things would change. One astronaut would say, "Hooter, I'm going to be leaving." I did these in pencil. All of a sudden this whole chain that I'd have—because I had to be working on these things two years out, because we would aim at assigning a crew 12 months prior to launch, is what was always the template. I really enjoyed the launches and the landings because it got me away from the office, and I'd have more of an opportunity to work on the stuff that took some diligence and took some real thinking to put together.

ROSS-NAZZAL: I did want to ask you. Rhea of course flew when you were chief of the Astronaut [Office]. You're a spouse. How did you handle spouse duties being chief of the Astronaut, and you've got to be there for launch. You've got all these other responsibilities? [How] were you able to tackle those responsibilities?

GIBSON: I am devious because one of the things that happens right before a mission is that Trudy Davis would come to brief me on what the family support plan was. We'd go into my office. She had to know who all the kids were, all the spouses, all the significant others that might be coming along. She would brief me on the whole plan.

I remember for Rhea's launch, SLS-2, she's briefing me on all this, and she said, "We will have drivers to pick you up at the hotel and take you out to the beach house."

I said, "Well, Trudy, I've got my own badge so I can just get myself out there."

She said, "Hooter, you're going to be one of my worst nightmares, aren't you?" I was joking with her. When it's time for you to be the big boss and be the big hero, you can go do that. When it's time to be a spouse, it's time to be a spouse. I did all the things that were expected of me as a spouse as well.

After her mission, her crew was the featured crew at the Fiesta Bowl, so they were going to ride in the parade and they wanted me to ride in the parade. I said, "Come on, I'm not part of the crew."

"No. We want you." I had to ride in the parade.

There was a governor's reception the night before the Fiesta Bowl, and they had name tags for everybody, and you can probably see this coming. My nametag said Mr. Seddon, and I

wore it, because you got to be a good sport about all these things. I wore my nametag that said Mr. Seddon. Rhea loved it, she just loved it dearly, that my nametag said Mr. Seddon.

ROSS-NAZZAL: Did you host a party? I know there's usually a party.

GIBSON: Oh, sure, oh yes, we always did. We always had a party down at the Cape before launch, and then we always hosted a party here after the mission. To be honest, I think Rhea did all the legwork, because she was the one who had been doing that the most, so I think I showed up and enjoyed the party. She had done all the work, if I remember right. Got to give her all the credit in the world.

I'm sure that I did not fly the weather plane for her launch, because I would need to be up there on the roof of the LCC [Launch Control Center] with the kids as well.

ROSS-NAZZAL: I was curious about that.

GIBSON: I'm sure I was not doing the weathership for that mission. Yes, it changed things a little bit. But that's the only time that happened. It was basically two years, from the end of '92 to about the end of '94, that I was chief astronaut. You said you had a couple questions on it as well.

ROSS-NAZZAL: I had a couple more. Were there any really memorable missions for you during that time? Any issues that you had to work as chief of the Astronaut Office? Either when crews were in orbit or getting ready to launch, landing?

GIBSON: They were all spectacular, always.

ROSS-NAZZAL: I wrote down the Hubble Space Telescope repair. I wasn't sure what your involvement was as chief in that.

GIBSON: They had already been assigned to that, so I stayed out of their hair for the most part and then flew the weathership. I was so proud of that crew. They got the Collier Trophy for that, which is just huge, and richly deserved. They innovated a lot of things. What's it called when you put the goggles on?

ROSS-NAZZAL: Virtual reality?

GIBSON: Virtual reality, yes, they were using virtual reality for some of their training, because for the EVAs [extravehicular activities] they couldn't have a mock-up like that in the water tank, because we didn't have the big water tank [Neutral Buoyancy Lab], so they weren't able to do that. I remember they had done a lot of that. That was a really special mission, obviously. But all of them were spectacular.

One of the really pleasing things was when I'd fly the weathership for landing, the STA, the Shuttle would come back in and land at the runway at KSC [Kennedy Space Center, Florida], and then we would go land the STA over at Cape Canaveral Air Force Station [Florida], because we couldn't land on the runway that the Shuttle is on. We'd go over there. The NASA

helicopter would be sitting there waiting for me. They'd pick me up and fly me back over to the Orbiter, so that I could be there to greet the crew when they came out of the Shuttle as well.

I would ride back with them in either the crew van or the big portable people mover that we got from Dulles [International] Airport [Chantilly, Virginia]. It was so amusing to watch them, because they were like a bunch of kids that had been eating chocolate. They were wired. They were ping-pong off the ceiling. They were all so excited. "Wow, during reentry did you see the fire at Mach 20? Did you see the way it was wrapping around the windshields?" They were just ping-pong off the walls. I got to just sit back and observe them doing that, and I remember that excitement. That was always so enjoyable for me, to watch how excited they were when they got back from a mission.

There was one really memorable [mission], as I was babbling [I remembered] flying the weathership for. It was Charlie [Charles F.] Bolden's mission. He was the commander. It might have been his last mission [STS-60], in fact I think it was. I think it was his last mission.

ROSS-NAZZAL: Trying to remember which one that was.

GIBSON: I was flying the weather plane, and I remember [Jack A.] Triple Nickel was the STA instructor pilot in the right seat with me. We have a real issue, and that is that an hour before landing time we have to give a go-no-go for the deorbit burn. The situation that we had was that we had some clouds around the landing site, and the weather guy on the loop said, "Okay, here's what's going to happen. There's a gravity wave coming through. It's going to move all that weather out." So based on all that, we gave a go for the deorbit burn, and they did the deorbit burn.

Now they're on their way down, and of course Triple Nickel and I are staying out of the way at that point but we're still flying around the place. It's socked in at the SLF runway, Shuttle Launch Facility runway. It got socked in. I remember Triple and I looking at each other's eyes with our eyes being about this big around. [Demonstrates] And we're like 10 minutes from landing and the place is socked in.

Sure enough, it moved out in time for the landing, and Charlie Bolden was able to come in and land it without issue. But man oh man, the two of us were really nervous. We were really nervous for that landing, and that was a KSC landing too.

ROSS-NAZZAL: I bet.

GIBSON: That one was a little bit of a challenge. Of course there's nothing we can do at that point. We had given them the go for the burn. We had agreed with it. I had agreed with it. That was one of the other things I saw. John Young refused to give a go-no-go when he'd fly the weathership, because he didn't want to be in that position of being either go or no-go.

I think the rest of the mission control team likes to hear what I'm seeing; do I see the weather as go or no-go. So I made sure I always said go. If it was no-go, then usually somebody else made that call that it was no-go. I don't think I ever had to say, "I see it as no-go." It was always so apparent that it was no-go. I always made sure I came up on the loop and said, "Okay, I see the weather—from what I'm observing and from what we've done, the flying—as a solid go. So I'm go for landing, go for deorbit burn."

There was just that one time that I was, "Oh no, what did we do? Charlie is going to make an instrument approach all the way to touchdown."

ROSS-NAZZAL: Sweating bullets there.

GIBSON: Which could have been done. Because they would do that in training in the STA. They'd put, basically, a screen in front of them, but you still had the heads-up display, because they put this opaque thing [in front of them]. At some altitudes sometimes that would be well beyond preflare, and I want to say even into the final 1.5-degree glide slope, that they would leave you without a clear view, and then they'd finally pull it out for the actual touchdown.

I'm convinced you could have done it using the heads-up display. It was so good that you could have landed, because it depicted a runway in the heads-up display. You had sink rate, altitude, airspeed, all that stuff, that yes. If you had ever had to, you could have done it. I think he would have been okay. But yes, we were sweating a little bit on that one.

ROSS-NAZZAL: I can imagine. I wanted to ask. Deke [Donald K.] Slayton had passed away while you were head of the Office. Was that a big deal? Did you help organize the memorial? Obviously he's one of the giants.

GIBSON: No. I missed it because I was down at the Cape. I remember watching the ceremony that we held here in the auditorium for Deke, and I remember one of the guys that I flew in air races with, a guy named Dusty [John] Dowd—I just did a talk for him in January of this year before the virus got started. He's a crop duster, is what he does for a living. But he flew in air races, which of course I did too, so I knew Dusty from the air racing at Reno. Of course I knew Deke from the air racing as well. He and I actually raced against each other on some occasions.

I remember Dusty got up to speak at Deke's ceremony. It was, "Gosh, everybody, I'm just a crop duster." He gave a really impassioned talk about his friend Deke Slayton, but I had to miss it, because I was at the Cape for a launch. But I remember watching it on NASA TV.

ROSS-NAZZAL: I was just curious if you had been involved in all that. One of the things that I had noted is that you were on a consulting panel about Russian involvement in the International Space Station at this time. Wondered if you could talk about that.

GIBSON: When I was chief astronaut I got a phone call from George Abbey, who was up in [NASA Headquarters] Washington, DC, then, sitting at the right side of the father, Dan [Daniel S.] Goldin. George said, "Pack your bags and get up here Friday. You're going to be meeting Saturday."

I said, "Well, George, what am I going to be doing?"

He says, "You'll find out when you get here."

What it boiled down to was it was a Space Station Redesign Team, and it was heresy, because Space Station Freedom was a juggernaut at the time that had thousands of people and a gigantic budget, and they had that whole big facility in Reston. We actually met. I went to ask PJ [Paul J.] Weitz, who I think was deputy center director then. I said, "PJ, do I have to go?"

He said, "Well, he who sits at the right side of the father has decreed that you have to be up there so if I were you I guess I'd go."

We met at Tom [Thomas P.] Stafford's office, and Dan Goldin came in basically in a disguise. He had a hat on. He had a jacket on with his collar turned up. The story was if the folks at Reston and the Space Station Freedom folks find out that I'm doing this it'll be a really

bad day for NASA. This was all going on. We spent three or four days up there just coming up with concepts, what could we do instead of Space Station Freedom. I'm sure George Abbey probably was one of the big forces behind all that, because you probably remember we had survived a vote in the House [of Representatives] by one vote. Space Station Freedom had stayed alive by one vote. I guess it was getting to be a little desperate.

That was where that started, and that became Space Station Redesign. At some point the word got revealed or it got announced that we are taking a hard look at the Space Station, and eventually Bryan [D.] O'Connor got appointed to head it up from Headquarters, where he was up there as head of SR&QA [Safety, Reliability, and Quality Assurance], I believe. I was part of that, so I had gone to a number of the meetings up there in DC on it.

When Rhea broke her foot in training for SLS-2 over in the FFT [full fuselage trainer], they were doing emergency escape training on the slide. She was one of the last ones to go down the slide, and it had lost some of its air pressure. I don't remember which foot it was now, but one of her feet got tucked under by the end of the slide and broke the four big bones in her foot. That had to really hurt.

I was sitting in a meeting in Washington, DC, and somebody came in and tapped me on the shoulder and whispered to me, "Hoot, your wife just broke her foot in training." I gathered up my papers, and I walked out of there. I checked out of the hotel, and I headed for Dulles Airport, which was where I'd parked my T-38.

I was in a big rush to get home, and I was in such a big rush that I took off. I'm climbing, and I had to level off at 2,000 or 3,000 feet or something like that. I leveled off, and something came up in my field of view and I looked, and it was my boarding step. I had neglected to stow

it, and the ground crew there at the fixed-base operator didn't know whether that was something that automatically retracted.

I had to pull the throttle back and slow way down because I didn't want that thing to break off and go down the left engine. It took about 40 minutes for them to vector me around to come back and land at Dulles again. So I messed up big-time. Here I am, I'm in a hurry. I had to land, then I had to refuel, because I can't make it without refueling. I was in a big delay to get back.

From that point on, I didn't take part any more, because Rhea really needed the help. She was on crutches for a couple months at least. I wasn't part of the redesign effort from that point on. I remember I just had too much else to do.

I guess one of the things that the team had wanted was they had wanted the buy-in from the astronaut corps. By me having been part of it, we had a buy-in, is what we had. That led to the International Space Station. One of the big things that saved the day was getting the Russians involved in it.

ROSS-NAZZAL: That's something that I wanted to ask you about because there was starting to be this push of astronauts working on Shuttle-Mir, going and working and training over there. What were your thoughts about that at the time, and what did the rest of the Office think about that?

GIBSON: Man, that was a big challenge as chief. Glad you brought that up. That was a big challenge, because I have to admit I didn't want to go train in Russia for 14 months to go do an increment on Mir. Finding astronauts that wanted to do that was really tough. I remember

George one time saying, “Hey, wait a minute, you don’t ask them, you tell them.” Number one, that’s not my style. I didn’t believe in that. The other thing was this was really disappointing to me because as a leader you lead by example.

Was I going to go train for 14 months in Russia? No. Was I going to sit there and say, “Okay, all you guys get out there and train for 14 months in Russia and do that.” This was a real quandary for me, because I was trying to get people to do something that I didn’t want to do. I have to admit I didn’t want to do it. We had small kids, and we weren’t going to move them over to Russia. It was tough.

It was tough finding people that were willing to be the DOR, director of Operations, Russia over there. It was difficult getting astronauts who were willing to do that. It was tough. We had a few crazy people that stepped right up and said, “Hey, yes, I want to do that.” I remember working to accommodate. Let’s see. Who was it that wanted to do it? He was up there. Let’s see. Was it when the fire happened or the collision?

ROSS-NAZZAL: Was it Mike [Michael] Foale?

GIBSON: Mike Foale was one of the ones that wanted to go over there and do that. No. Let’s see. Who was it? He hadn’t flown yet, but he and his wife said, “We’d like to go there and do that.” George said, “No. Can’t be somebody that hasn’t flown yet because the Russians are very conscious of stature and position.” Jerry [M.] Linenger is who it was. Jerry Linenger and his wife, they didn’t have any kids, and they wanted to do this, but he hadn’t flown yet.

I came up with a plan. I’m going to add him to STS-66. It was somewhat late in the game. I don’t know that they gave him the full amount of work to do on the mission because it

was a late add-on. But I added him. I remember I had to go to the PRCB [Program Requirements Control Board] and pitch it before the PRCB. We had ascent performance; we had room on the flight. I don't remember how many there were. But it was STS-66. Don [Donald R.] McMonagle was the commander and Curt [Curtis L.] Brown was the pilot.

I got him added to STS-66 so that he could go fly that mission, come back, do his postflight, and then almost immediately head for Russia. But you had to do that. Here was somebody who wanted to do it. It was challenging getting people who wanted to do that. Rhea made it very clear, "No way Jose am I going to go to Russia to train." She was not interested in doing that.

ROSS-NAZZAL: You can understand, given the state of affairs in Russia at that point in time.

GIBSON: Yes, and I got to see that. When we get to STS-71, I got to see what the place was like, and it was rugged.

ROSS-NAZZAL: Tell us about being named commander. You talked about that *SpaceNews* interview and how you weren't going to take the best roles. How did that come about?

GIBSON: It's a really interesting story, because what happened was I put together my crew for STS-71. This is really a challenging mission, so it [needs] to be a really great crew, and it was. I put together a really great crew. I'm going to tell who I picked as commander, because he was a dear, dear friend of mine, and he's not with us anymore, Steve [Steven R.] Nagel.

ROSS-NAZZAL: Oh yes, I really like him.

GIBSON: I picked Steve Nagel to be mission commander. I have always loved Steve Nagel. I sent that crew forward to Dave Leestma, and he said, "Okay, great, I'll send it up the line."

He called me, I don't know, a week later. I'm pretty sure it was just a phone call. He said, "Hoot, your STS-71 crew."

I said, "Yes."

He said, "They really like it, with one exception." I have to admit instantly the hair on the back of my neck stood up because in my two years of being chief not one of my crews had been messed with. Because who knows them better than me? Nobody. The other thing was I had put so much work in on this. He said, "With one exception." I was awestruck. I don't think I said anything. He said, "They want you to command it." Once again, I was dumbstruck, I didn't know what to say. He said, "What's your reaction to that?"

I said, "Dave, I don't want to do that. I've been telling people for two years now that I'm not going to do it. I don't want to do it. Steve will do a fine job. That is an excellent crew. They will do just fine. I want that to be the crew."

He said, "Okay, I'll go back up the hill again." He did, and he called me. This time it was only about four days or so. He called me, he said, "Hoot, they still want you to do it."

I said, "Dave, I still don't want to do it."

ROSS-NAZZAL: Who is they? Is it the [NASA] Administrator?

GIBSON: Headquarters, and much of it was coming from George Abbey. He had always been a big fan of mine. I wasn't always in agreement with him, but even so he was still a big fan of mine. I said, "Dave, I still don't want to do it."

He said, "Okay, I'll try once more." Then he called me a couple days later and he said, "Hoot, do me a favor."

I said, "Sure, Dave, anything."

He said, "Shut up and go command STS-71." At that point I've delayed the crew getting announced now for close to a month, so it's getting to be late, and I finally gave in.

I said, "Okay, Dave, I'll do it under one condition."

He said, "What's that?"

I said, "Would you come over to Building 4 and tell my astronauts why this is happening, that I didn't want to do it?"

He said, "Sure." He did, he came over to Building 4. I wasn't there. Maybe I was at a launch or something like that. He came over, and he made the announcement that I had fought it. I did. I fought it, because, again, that's not the job of a leader.

What I didn't know that I found out subsequently was that we had an American-Russian docking previously called Apollo-Soyuz [Test Project, ASTP], and they did two dockings. Deke did one and Tom did the other one. I don't know who did which one. On one of those dockings we rammed them so hard, we almost broke the docking mechanism is what they figured. It turns out that the Russians had never forgotten that. They had never gotten over it for 20 years.

Now here we come with our quarter-million pound Space Shuttle, and the Russians were really nervous, it turns out. What NASA wanted to say to the Russians was, "Look, this is so important to us." This winds up being kind of self-serving from the sound of it, but this is what

actually happened. “This mission is so important to us, we’re sending our chief astronaut to command it.” That apparently reassured the cosmonauts and the Russians.

Having fought it like I did, I have to admit I’m really glad I got to do that one. It went against everything that I wanted to do as a leader, but it was fascinating. I finally gave in, and we announced, and I got together with Dave Leestma to pick the next chief astronaut. Because at that point it was, “No, you’re not going to have an acting chief, you need to step down.” That was a disappointment too, because I didn’t want to step down from being chief. I really enjoyed being the leader of the astronauts, and I didn’t want to leave it. But I didn’t have a choice, I had to step down, so I helped pick Bob [Robert D.] Cabana.

Because again from the Navy, Marine Corps area, you learn you are here to take care of your people, so we really wanted somebody that we felt would stand up for and take care of the astronauts. I got to help pick Bob Cabana for that. Then we launched right off into training.

ROSS-NAZZAL: Can I ask one question? I’m curious given what your wife told you at the table that she didn’t have any representation. Had you ever considered at that point maybe making a mission specialist chief of the astronauts? Had that ever been discussed? Or was it always going to be a pilot? I know Peggy [A. Whitson] was the first scientist.

GIBSON: It had never been my choice. It had never been my decision. I don’t think it was even looked at. I think a large part of it might have been the flying the weather aircraft for launch. It had not really ever come up, to tell you the truth. Of course that would be a decision for the director of FCOD, who to make the chief astronaut.

When I had picked Linda Godwin to be my deputy, man, there was no arguing with that at all. Everybody just fell right in line and said, "Great choice."

ROSS-NAZZAL: I was curious about it. Because I talked with Peggy about it and Peggy said it was so unusual not her being a woman but her being a scientist. People were like, "We've never had a scientist who's head of the Office before." So I was curious if anyone had ever thought to mix that up.

GIBSON: When you say the name Peggy Whitson, I can't see anybody having any arguments with it. How could anybody be better suited and better qualified and more capable than Peggy Whitson? So it was going to happen. It was bound to happen. And it sure did.

ROSS-NAZZAL: It did. Yes. Tell me about that mission. One of the things I was curious about, I noticed that *Atlantis* was out in California for a while, for the Orbiter Maintenance Down Period. Were you following the vehicle at that point?

GIBSON: Really was not. We weren't involved with it much at all. I guess it was getting modifications to have the docking mechanism onboard.

To back up a little bit, when it became obvious we were going to be working with the Russians, there was a push that said, "You know what, astronauts, we all need to start learning to speak Russian." They had hired a company from around here. I know TechTrans had done some things with us in terms of providing us Russian interpreters. I don't remember the name of the instructor, but he was good, and he came to train the astronauts. Once again I said, "Okay,

well, good, I need to show some leadership.” So I signed up to take the Russian language courses as well.

Altogether, by the time we launched, I had about a year and a half that I had been taking Russian language lessons. That’s what I mean by you lead by example, you show the way. Even though I was busy, I still made time to attend the Russian language lessons, so I had some background to it.

Then when we were assigned as a crew, we got assigned Tatyana. I don’t remember her last name. But she was really interesting because she was older than us. When we launched I was 49 years old. She was older than us; she was probably in her early sixties. She was not the slightest bit impressed that we were the crew that were going to conduct the very first docking by the Space Shuttle, that we were going to go dock with the Russians on Mir. She wanted us to know our Russian language lessons. She didn’t cut us any slack. She would look at me across the table. She’d rattle off something in Russian, and I’d stare at her with the deer in the headlights look. She’d go, “Well?”

If I had no clue whatsoever I would just say, “Moya samaya lyubimaya muchityel’nitsa,” which is a play on words. Moya samaya lyubimaya is my most favorite. Uchityel’nitsa is teacher. But if you take the word uchityel’nitsa and put m in front of it, muchityel’nitsa is torturer. So I was saying my most favorite torturer. She’d say, “Nyet, nye muchityel’nitsa, uchityel’nitsa.”

But she was fun; she was fun. Ellen [S.] Baker was really fond of the Russian language lessons, and I had to twist her arm a little bit to get her to go on that mission. She had two daughters, and I think she might have been a little bit focused on how fragile life can be, so I had to basically twist her arm to get her to do that mission. But I wanted a doctor. I wanted a

medical doctor, because we were going to be doing a lot of—previously they were going to be doing, then it became we were going to be doing—but they were going to be doing a lot of orbit testing on the cosmonauts who had been up there for three months in the Spacelab laboratory, so I wanted Ellen Baker on that mission.

She really enjoyed the Russian language things, so we had a session every week. Early in the game we might have had one or two a week, and then later on as we got more busy we had to scale back. It was really fun because I almost have a second language now, that being Russian. Not really, because I am really far away from fluent. The joke I like to tell when I'm giving a talk is, "It was hard for me to learn Russian because I are engineer, and engineers ain't talk good" in English, let alone in Russian. But what little Russian I did pound into my brain all those years ago, a lot of it is still there.

ROSS-NAZZAL: That's great.

GIBSON: I've had occasions where I've used it, where I can still use it, and remember it a little bit. Sometimes when I fly on airliners I'll take my little Russian language book along and just review it and read it over. Again, I'm not good at it, but I can still do it. I was at a thing in California where there were two fighter pilots. One of them was an Air Force fighter pilot who had shot down a MiG in Vietnam. The other fighter pilot was the MiG pilot he had shot down. We went to breakfast together and—I'll make this story quick—there was an interpreter from the University of Washington [Seattle] that if we had something to say to Hong My—Nguyen Hong My was his name—we'd say something to the interpreter, he'd say it to Hong My, it would come back to the interpreter and back to us. It was really unwieldy.

Then it dawned on me, he flew Russian MiG-21s in Vietnam. He must have trained in Russia. When you train in Russia, they don't learn your language, you learn their language. He must speak Russian. So I looked across the table at him and I said, "Ya tozhye MiG-21 lyotchik," which is, "I am also a MiG-21 pilot."

And he said, "Oh, konyechno, of course." He and I started speaking a little bit of Russian across the table. There was a videographer and a photographer, and they thought this was just the coolest thing ever, so they started videotaping Hong My and me speaking in Russian across the table. I probably understood 10 percent of what he told me, but I pretended like I understood it all. So it's been fun. It's been fun to have a little bit of a second language.

ROSS-NAZZAL: You said you were a MiG pilot. Did you get a chance to fly while you were over there?

GIBSON: Not in the military. A friend of mine who inherited a ton of money started buying jet fighters, and he wound up having nine jet fighters that he kept here at [William P.] Hobby Airport [Houston, Texas]. Eight of them kept at Hobby Airport, one of them, the F-104 Starfighter, had to fly out of [George Bush] Intercontinental [Airport, Houston, Texas] because it needed much longer runways. Anyway, he got a MiG-15 in about 1988, and I said, "Jim, what do I have to do to fly your MiG-15?"

He said, "You know what, I need somebody to fly the MiG-15," because he would have us do air shows. So I started flying the MiG-15, which was the airplane that we were fighting against in Korea. He also owned two F-86s, so we would do the F-86 and MiG-15 Korean War dogfight enactment for air shows.

I flew that for about a year, and I said, “Jim, the MiG-15 is a lot of fun, but you need to buy me a MiG-21, because it’s much cooler.”

He said, “Oh, sure.” Then he called me about six months later and he says, “Okay, I just bought you your MiG-21.” And I really love that airplane, it is such a cool-looking airplane. Most people that see it use the word sexy. It’s a sexy-looking jet. I got to fly air shows in that. People ask me nowadays, “Hey, what’s your favorite airplane?” Usually I will say the MiG-21. It was really a cool airplane, really a fun airplane. Lightweight fighter.

The ones I flew, the F-14 Tomcat and the F-4 Phantom, those are Cadillacs. The MiG-21 was a Porsche. A little lightweight hot rod is what it is.

ROSS-NAZZAL: I would never have thought that about a Soviet plane. It’s not probably how I would have ever thought to describe a plane.

GIBSON: It wasn’t very sophisticated, and it didn’t have any fuel. It was really short-range. It was designed to be an interceptor and shoot down the American bombers coming to bomb Russia. I think the longest flight I ever had in one was like an hour and 5 minutes, hour and 10 minutes. That was the longest I ever kept one in the air. I would do an air show routine where they said, “You got 6 minutes.” I would take off, it would be an afterburner takeoff, go straight up, pull the power back, zoom back down, come down the runway at 500 knots. I would do this 6-minute routine that involved a lot of Gs, a lot of afterburner, and clear the runway, and I would have burned two-thirds of the fuel that airplane carried in 6 minutes. They’re very short-legged and very short-range. But man, what a fun 6 minutes it would be.

ROSS-NAZZAL: Talk about the training if you would, because you had the new docking system, and from what I understand from Lisa [M.] Reed, who was working on your training, that was a challenge.

GIBSON: Oh, golly, yes. It really was. We got to see it over in Russia when we went over there. Yes, we started training on doing dockings. Of course the Shuttle mission simulator, SMS, had the software load I think virtually right away when we started, because they'd been working on it. We knew the Mir docking was coming up, so they were working to implement it.

We also would go over to I think the SES, the Shuttle engineering simulator, and we could do practice dockings over there. I'm trying to think if there was someplace else as well. I remember we were very very thoroughly trained by the time it was time to go to space. The number that I use—I think we did at least 98 practice dockings in various simulators before we flew. We were thoroughly ready for it.

The thing about rendezvous and docking is it's easier in real life than it is in the simulator, because as good as your visual depiction is in the screens, it's not as good as what you can see in real life. Range rate, closure rate, things like that, exact positioning is a whole lot easier to see in real life. We were so well trained.

I need to do a shout-out at that crew, because I had picked a really really sharp crew. Charlie [Charles J.] Precourt was the pilot, and it was interesting after having worked with him and trained with him on that mission I never told him this but I said—I don't remember who I was talking to, maybe Ellen Baker—I said, "I won't be surprised if he isn't the first Air Force chief astronaut." Sure enough, Charlie was chief astronaut a couple years later. He was that good. Greg [Gregory J.] Harbaugh was that good as well. He was just really sharp.

We had such great tools as well. We had the laptop computer that had the RPOP Program, Rendezvous and Proximity Operations Program. That thing was so effective because it was tied in to the Shuttle's computers, so it knew where we were. It knew where the Mir was. It had RelNav, which was relative navigation, which is what we use on the Orbiter to do all this. It had all that information. But what was really great, you actually got a little depiction that said, "Here's where you are right now, and if you don't do any thrusting here's where you're going to be in 10 seconds, 20 seconds, 30 seconds." It would show us rising up, dropping back, dropping down, and then being at a lower altitude and scooting out in front of the Mir. You could see where you're going to be in 10 seconds if you don't do something, where you're going to be in 20 seconds. Every time that I would make a thruster input, I could look at what the effect of that was predicted on the RPOP Program. It just made it so excellent to use.

We wanted to be very efficient on the docking. You want to minimize your fuel usage. You can get up there and just bang the thrusters and run yourself out of fuel. If you did it badly enough they'd say, "Okay, we don't have enough fuel for you to finish up the docking, so come back and land." It could make a difference.

What we wanted to do was not have to do any braking, because braking is really expensive. We had two possibilities. Initially we were going to fly up in front of the Mir Space Station, and level with the Mir Space Station, and then back in along the velocity vector, in other words where we're going. Back in along the velocity vector to docking.

About halfway through our training it was decided that it would be better to fly up along the radius vector from the center of the Earth, the Rbar. The other one is called the Vbar, and this was called the Rbar. To fly up on the rendezvous, get on the radius vector, and stop, and then fly up along the radius vector. Now we had two different attitudes that we could be in. One

of them was called SNIP, Shuttle Nose In Plane. Which means our orbit plane, the direction that we're going, the nose is forward, so we're flying like an airplane.

The other one was really cool because it was Shuttle Nose Out Of Plane in Yaw, Shuttle Nose Out Of Plane in Yaw, SNOOPY was the other methodology it could have been, in which case we would have been 90 degrees to the direction that we were going. That was SNOOPY. It was decided, pretty quickly, "Let's do it SNIP," because that worked out better for the fuel.

The advantage of coming up from below was if you do it right, you can coast to a stop at any point and not have to fire any thrusters for braking. Because once we got inside of I think 1,000 feet, we had to go to what's called Low-Z, where normally your braking thrusters just fire straight up. If we fired those inside of 1,000 feet, we stripped all the solar panels off the Mir and they'd probably be mad at us.

ROSS-NAZZAL: Probably.

GIBSON: So at 1,000 feet we had to go to Low-Z. Low-Z uses the nose thrusters, the forward-firing thrusters, and the aft-firing thrusters, which cancels the fore and aft, and it gives you a little component of braking. If you had to brake using Low-Z you used something like 12 times as much fuel for braking. The advantage of coming up along the Rbar was that we could just coast to a stop.

We came up with a rule of thumb, and I'm trying to remember what it was. It's been a few years, that was 1995, so a quarter of a century ago we did this. It was something along the lines of if we took our closure rate and multiplied it by 1.5 and divide by 1,000, that was how many feet from the Mir we'd come to a stop. It was something like that. That worked great.

That worked great, because we had two built-in holds. We had one at 160 feet, and we had another built-in hold at 30 feet.

You wanted to be able to coast up to the 160-foot point and not have to hit the brakes to stop there. Here we go, we got all these computers and all this technology and the RPOP Program, but our primary calculation for stopping at 160 feet was range times 1.5 divided by 1,000 would be rule of thumb for how to coast to a stop. You came up with things like that in the training, and all that training really paid off.

We had built-in laser range finders that just projected up there and gave us a reading. I guess that came out on one of the laptop computers as well. It told us our range and a range rate, what our closure rate was. Then Greg Harbaugh also had a handheld laser range finder that he'd be shooting at the Mir and backing up the ones that were being displayed on the computer. Of course it displayed right on the laser.

I had some really really excellent people keeping me from messing it up as we were coming in for the docking. The parameters were pretty stringent. We had to stay within a 10-degree cone outside of 500 feet. We could be within a 10-degree cone of the docking port. That was where mission control had verified that any of our thruster plumes wouldn't damage the Mir. I think it was inside of 500 feet, or inside of 1,000 feet, we had to stay inside of a 5-degree cone off the docking port. With RPOP and with us looking out the window and seeing it, it wound up being fairly easy.

However, this wasn't like a probe and drogue where it'll center you. I had to line up the centers of the docking rings. They said, "Okay, the tolerance is plus or minus 3 inches. You've got to line up the exact center of this." It's about a 4-foot diameter ring. "You have to line the centers up within 3 inches or else you'll bounce off. You won't capture. And the attitudes have

to be matched between the Shuttle and the Mir within 2 degrees.” So pitch, roll, and yaw had to be exactly the same as Mir within 2 degrees or you’ll bounce off.

The closure rate had to be one-tenth of a foot per second. That’s 1.4 inches per second. So that’s pretty slow. That’s about this fast [demonstrates], 1.4 inches per second. They said, “Hoot, if you hit them at two-tenths of a foot per second with your quarter million-pound Orbiter, you’ll destroy the docking mechanism. Your contact velocity is to be 0.1 feet per second plus or minus 0.03. Oh, and also, the Russians want us to dock over their favorite ground station, which is their most reliable ground station, so you’ve got a plus and minus 2-minute window.” So we had a time constraint as well.

ROSS-NAZZAL: No pressure, right?

GIBSON: Yes, no pressure. And that’s funny you mention that, because Dan Goldin, the morning before we launched, we had a telecon with him. It might have been a video telecon. We might have actually had that in those days, video telecon. One of the last things he said as we were getting ready to say goodbye, he said, “Hoot, no pressure, but I want you to know there are going to be 5 billion people watching you on television.” So no pressure.

ROSS-NAZZAL: What a way to send you off.

GIBSON: Yes. That was our send-off. Fortunately we had trained very extensively, and fortunately the likes of Charlie Precourt and Greg Harbaugh just made all the difference in the world. I think we were 2 seconds off. Our parameter was 0.1 feet per second plus or minus

0.03. We actually wound up—0.107 feet per second was our contact velocity. Mission control had already determined that by the time we landed. We had used something like 24 percent less fuel than they had budgeted for it. All the training and the rules of thumb and the excellent crew really made a big difference, Charlie and Greg.

We had a graph, so Charlie would be plotting our range against this graph. He'd say, "Okay, Hoot, you're probably about 4 seconds fast right now," or something to that effect. I don't know how, I wasn't supposed to keep that, but I got that. I should scan it and send you that just for fun, just in case you want it.

ROSS-NAZZAL: Yes.

GIBSON: Because I wound up with that graph. I think I told you my first two flights they let us keep all of our checklists and things that they weren't going to reuse. Now after that they let us keep our notebook, just our little book that we had where we could make notes as we went, but nothing else. Somehow I think I wound up with a ground copy of the rendezvous checklist, which didn't fly, so it's not a flown checklist.

ROSS-NAZZAL: Maybe that's why.

GIBSON: That actual chart, it was a cue card that Charlie was making x's on as we were approaching. Somehow I wound up with that. I didn't intentionally steal it from NASA, but somehow it's in my stuff, I'm pretty sure. I don't think it's a copy, I think it's the actual one.

ROSS-NAZZAL: That's great.

GIBSON: I'll scan that and send you what that looked like.

ROSS-NAZZAL: That would be good to put with the interview.

GIBSON: It makes it really apparent. It shows where the holds are. You've got range versus time where you can actually plot it and see. So I've actually got that still.

ROSS-NAZZAL: I wonder if you would talk about that moment of official docking and then getting ready to go into the Mir. What are your memories of that? Were you planning to take that photo? We've got that great photo from ASTP with the commanders shaking hands.

GIBSON: Oh yes. We knew. In fact PAO [Public Affairs Office] had talked to us. "Look, this is going to be something that is going to be memorable, and it's going to be something we want to make sure we do it right." The problem with the handshake in the tunnel there is that the people doing the handshaking block the whole view. We actually practiced I think over in the full fuselage trainer, over in the FFT. What I needed to make sure I did was get my back over against the side, so that I'm not in the middle blocking it. We actually had made sure we strategized it before we actually did it, to where we'd made sure that I was off to the side, so that we could see Vladimir [Dezhurov] as well.

Did I send you that newspaper article where the president said that this ends the Cold War?

ROSS-NAZZAL: No, you haven't, so you'll have to send it to me for this one.

GIBSON: I've actually got it on my cell phone.

ROSS-NAZZAL: Oh, do you?

GIBSON: Because I was hanging pictures.

ROSS-NAZZAL: You must have been going through things, because you've been sending me stuff.

GIBSON: You might be able to stretch this and see it. This I just hung up in the stairway in the man cave.

ROSS-NAZZAL: I was going to say, "Do I have my reading glasses?"

GIBSON: These are readers.

ROSS-NAZZAL: Oh, it's okay. That's the nice thing about the iPhone.

GIBSON: Yes, you can stretch it out.

ROSS-NAZZAL: Yes, you can stretch it, which is nice.

GIBSON: Now Bill [William J.] Clinton didn't say, "Well, Hoot ended the Cold War." I've interpreted it that way. But that's where it shows that Bill Clinton said—

ROSS-NAZZAL: "Guess this really means the Cold War is over."

GIBSON: Yes, the President of the United States said, "This handshake marks the end of the Cold War."

ROSS-NAZZAL: You look like you're having a great time with that smile.

GIBSON: Yes. We were fairly jubilant as this was happening. The docking itself, it was a little bit tense, because we had some really tight constraints. We had the potential to really mess things up, mess up the Mir Space Station, mess up the Shuttle. Could have been catastrophic actually, which makes you wonder why they wanted me doing it. But anyway, we close on in, and we contacted. I'm at the aft station, and we would get a capture light. I don't remember exactly where that was.

I'm out the window because we're maneuvering on in. Out the window and also on the CCTV, the closed-circuit TV, because that's how I'm getting the alignment. We had a camera looking through the center of our docking port where there's a window. It's looking at the standoff cross that's on the docking port on Mir. I'm flying all of those things. When we hit, let's see. Did I hit the switch, or did Charlie hit it? There was a post-contact thrusting, PCT, that

we had to command, because we're hitting it slowly enough that there's springs in this thing, and there's a possibility you would tend to bounce off.

Now that we're in contact, now we want a little bit of push to push the springs. There was a sequence of about 10 thrusters that fired to make sure that we went over the hooks, to capture the hooks that are off to the side on the docking mechanism. We get a contact light. I remember right away I keyed the mike, and I said, "Houston, *Atlantis*. We have capture." Once we had gone over the capture hooks I guess we saw contact, and then we'd fire the thrusters. Then we'd get a capture light. Charlie said, "Okay, capture light," and I keyed the mike and I said, "Houston, *Atlantis*. We have capture."

I wasn't there, but I've seen the video. Apparently Dan Goldin jumped up and grabbed the head of the Russian Space Agency and gave him a big hug right there in Mission Control. Rhea and the kids were in Mission Control, and she said everybody yelled and cheered. And everybody on the crew yelled and cheered as well, except for Greg. Greg was a little bit mad at us because there was still a lot of work to do, and it was all his work. It was bringing the docking mechanisms, retracting them together, and operating the 12 big structural hooks that grabbed and held the two things together. So he was a little miffed at us. He said, "Come on, the whole docking isn't over with yet." And he's right.

It was a momentary hooray and a momentary celebration, because that was the hard part. The hard part was getting there and getting it lined up and getting it properly captured. Then the rest of it was, "Yes, okay, we're pretty sure this is all going to work." But it was doing all the final latching. So Greg was a little bit miffed at everybody cheering.

ROSS-NAZZAL: It's hard not to be excited at that kind of moment.

GIBSON: Oh yes, it was really exciting.

ROSS-NAZZAL: You mentioned Rhea, and I did want to ask. Rhea was pregnant while you were training for this mission, and then she had the baby. Did that present any complications during the training and launch?

GIBSON: Good point. Yes, it was, because initially we were due to dock when she was ready to hatch, when the baby was due to be born. The only reason that didn't happen was that the Russians were delayed. The Spektr module—pretty sure it was Spektr—was actually delayed by about a month. We slipped, if I remember right, a month.

Initially she was going to have Emilee born while I was in space, so she was really happy that we slid long enough. Emilee was born on the ninth, and we launched on the twenty-seventh and docked on the twenty-ninth. Emilee was not three weeks old yet, she was two and a half weeks old.

What was kind of precious was because she was less than six months old, she was able to come with Rhea to the beach house. You had to be over 15 or under six months to be able to come near the crew, because six-month-old babies don't carry any bugs I guess.

ROSS-NAZZAL: Oh, good news.

GIBSON: So I got to enjoy her out at the beach house and cuddle her some. We've got some really precious pictures of Rhea sitting on one of the couches out at the beach house looking

really worn-out and weary, with this little precious baby about this big [demonstrates] asleep on the couch next to her. Emilee missed all that. Emilee was the only one of the kids that didn't get to see one of our launches. The other kids certainly did.

But we got her to the last launch. We didn't want to wait for the last launch, so we tried that launch that was in October or November of 2010, went down there, and it didn't go. So then we said, "Okay, well, we're going to have to make this work on the last launch." Fortunately she got to see the last launch. That was lucky. Then she would have been 16. She was 16 years old, got to see a Shuttle launch.

But yes, that was fun. Rhea took her to Mission Control when she went there in the viewing room with the other kids as well.

ROSS-NAZZAL: I think I've seen some photos of her with the baby and the boys in the viewing room. That's very cool. Did she ever get a chance to go to Russia with you when you were training? Or was she at home with the boys?

GIBSON: She was home with the boys, of course, and she wouldn't have really wanted to. We went there twice, and that was fascinating; it was really fascinating. We went there first time to train in September of '94, and that was about a 9- or 10-day trip if I remember right. The second one was in March of '95, and I don't completely remember why we had to go twice, because you would think you could get all that training done the first time. We trained on the Soyuz simulator. You don't really do much in the Soyuz. You sit there, and it does it all. Not like our machine, where it really needs a whole lot of crew input.

It was interesting too. In the Soyuz you didn't have a countdown clock. I guess you'd look at your watch, and you'd know when you were going to launch. But it didn't have that. When it was time for the Soyuz to do burns, it just did them. You didn't have to consent to it. On the Shuttle any time we did an OMS [orbital maneuvering system] burn, the vehicle couldn't do any burns without the crew doing them or consenting for them to be done. But in the Soyuz, the way you'd know—you launched, and you separated from the booster rocket, and you got up there, and when it was time for a burn it would start a maneuver, and maneuver to an attitude. You didn't have to let it or tell it to do it, it was just going to do it. When it did that you knew there was a burn coming up, and sure enough, okay, off you went on a burn.

Of course in the Shuttle we had to tell it to do burns, and we had to consent to let it do burns, or we had to do them ourselves with the thruster controllers. So that was interesting to see that.

Soyuz is like a small Apollo capsule, three seats. We had trouble with some of our astronauts that were going to go over there and train. They were too tall. It was a tiny little rocket, but we got to train on that.

Then of course we got to train in their Mir simulator. They called it a simulator. It's the equivalent of the full fuselage trainer. It didn't have a computer hooked up to it as far as I can see. It didn't do any dynamics. It didn't do any maneuvers or anything like that. It was more of a mock-up.

Like I said, the total trip was 9 or 10 days. We would have been at Star City. The first time we went there, though, we stayed at the Penta Hotel in Moscow, which was run by the Germans, run by Lufthansa. It had quite a bit of German efficiency to it. You still couldn't drink their water in that hotel; you had to make sure everything was bottled water. One of my

crewmembers forgot about that and brushed his teeth with tap water and got sick. It was that serious. I don't know how it is now, but back then it was a third world country.

Economically they were pretty devastated, and that was why we had to learn to speak Russian, because they could not afford to hire English teachers or buy English textbooks is what we were told. We had to attempt to learn their Russian. Underline the word attempt. Because I had Anatoly [Soloyev] and Nikolai [Budarin] on board with me, aboard *Atlantis*, to take over the Mir Space Station, and we needed to be able to talk to them. They couldn't speak much English. They tried, but they weren't taking lessons like we could. That was something that we had to make sure we did.

Going over to Russia, we had to use Russian, because it isn't like all the other countries in the world where everybody speaks English. No, they don't. They don't speak English at all. We actually tried going out to restaurants there in Moscow. I never saw anything in a restaurant that I liked, that was really good at all. You couldn't just order a steak. They had some kind of mystery meat that I remember I ordered one time. But we were training out at Star City.

The drive from Moscow to Star City was 40 miles, but it took 2 hours to do it because the roads were so bad. They were full of potholes. The traffic in Moscow was crazy. We were not allowed to drive, and we wouldn't have wanted to either, once you see the place. We had a driver that drove us out to Star City, Zvyozdnyy Gorodok, to train each day, and then brought us back to the Penta.

The second time we went over there to train, we stayed at Star City in a building. They call it the Prophylactorium, [that] is what it's called. It's for I guess visiting dignitaries and visiting astronauts. That's where Norm [Norman E.] Thagard—wasn't that where they stayed? I'm not even sure that Norm Thagard and Bonnie [J.] Dunbar stayed in that building, or if they

stayed in another building that was cosmonaut housing. But anyway, that's where we stayed the second time we were out there.

Once again, I didn't find any food that I really enjoyed very much. And I'm easy about food, I will eat anything. When I trained in Japan, I found things that I liked over there. But I didn't find very much in Russia that I liked, so the food was a little bit of a challenge as well.

But it was so fascinating. One of the places we went on our first trip over there was called Monino. It was their equivalent of our [National] Air and Space Museum [Washington, DC], only most of it is airplanes sitting outdoors. They had a couple of old rickety wooden hangars where they had some of their World War I aircraft and some of their World War II aircraft, but most of their jet airplanes were sitting outside under the trees and out in the Russian winters. Just sitting outside. It was fascinating. I must have shot six or eight rolls of film in that place, because here were all these airplanes that as a fighter pilot I had trained to fight against. Only we didn't have very many good photos of them. We had these grainy photos shot through the trees by some air attache from the embassy that had managed to capture a picture of a MiG-25 or a MiG-29, and they'd be these not very good photos. Here we are walking around a MiG-31, MiG-25s, Sukhoi 27s. It was just fascinating, the day that we got to go to Monino.

We saw the Russian BOR-4, which we believed that they had built to be a Space Shuttle killer, to launch and attack a Space Shuttle. It was a lifting body. It's the shape that later on wound up being the X-38. It was basically the same shape as the X-38. BOR stood for byespilotnyy orbital'nyy raketoplan, pilotless orbital rocket plane, number four. The fourth one in sequence, so it was called BOR-4. That was on display there at Monino. It landed on skids. It didn't have any wheels. It landed on skids. They had flown them to space and back or maybe

subscale models of it. But anyway some of the things we got to see were just absolutely fascinating.

That was a really eye-opening tour for us. We trained at all the manufacturers there in the Moscow area. NPO Energia, Kaliningrad is where they're based out of. They toured us there and showed us all their facilities. The Russians had actually built about five shuttles, I think, was how many they had built. Buran, of course, was destroyed when the building it was in out at Baikonur collapsed in the snow. But they had another. We saw one at Kaliningrad in their high bay. Then of course there was one that they had moved into Gorky Park to make a restaurant out of, a bar and a restaurant. We didn't stop and see it, but we had driven by, and saw it sitting there in Gorky Park. Then of course Buran was down at Baikonur. So there's at least three, and I think they had one or two more that they had built, intending to do big things with them. But when the Soviet Union crumbled apart they couldn't afford to keep doing it, so they didn't. They had to quit. But like I say, it was really fascinating.

One of the interesting things about Russia was they told us, "Hey, make sure you bring little packets of tissues. If you do wind up having to go to a public restroom there's probably no toilet paper." We're getting right down into some really gritty stuff here. Even in Star City in the cosmonaut training facilities the bathrooms didn't have toilet paper in them. Somebody would take a paperback book and stick it in there, and people would tear pages out of it to use that as toilet paper. It was an experience; it was a real experience.

ROSS-NAZZAL: Did I read correctly that you met Valentina [V.] Tereshkova when you were over there?

GIBSON: Yes. After the mission, after STS-71, the Association of Space Explorers was having a symposium and a get-together and a meeting in Warsaw, so we were invited. They really wanted us to attend. I guess it turned out that only Charlie Precourt and I wound up going. I guess it was because of travel funding. He and I were the only two that went. There was a little bit of a funny story. We were going to go back to Russia and debrief, so we were scheduled to go back to Moscow, and that was the approval for the travel funds, that we were going to go debrief the Russians.

You can probably see this coming, but about a month and a half ahead of time we put in a request for visas from the Russians. Since we were going over there anyway they said, "Okay, well, then you can go to the ASE convention since it's just a little bit more expense for you to go to that." Therefore, we actually wound up flying from the U.S. over to Warsaw. But we took a day of leave en route in Germany because we had met the folks at Porsche on our first trip over there, and got to know Klaus Bischof, who runs the Porsche museum, and so we just got a VIP [very important person] tour of the museum.

When we went back, I got ahold of him again and said, "Hey, we're on our way over there. Is it convenient for us to come see you?" So we rented a car. We switched planes in Frankfurt. So we drove to Stuttgart, which is where Porsche is, only this time they had us go to their test track. They had five Porsches pulled out there with their factory drivers. They don't allow amateurs like us to drive on their factory [track], but they had factory drivers. I've seen 160 miles an hour on the straightaway coming into a hairpin curve with the factory drivers driving us around.

But anyway, what happened was we never got a visa, so the Russian portion of the trip got canceled, but we still got to go do the first part, which was go into Warsaw, and go into

Stuttgart again. That's where we got to meet Valentina Tereshkova. I have pictures of me shaking hands with her. I should send you those too. I should be making notes.

ROSS-NAZZAL: We've also got it in the transcript. When I send you the transcript, I'll just highlight. Please send, please attach.

GIBSON: Yes. We got to meet her there at the ASE, Association of Space Explorers, symposium. That was a thrill. That was a thrill, getting to meet her. Oh, golly, who else was there? I got photos from it, and I can go back. Oh, shucks, their general that flew in space, did the world's first spacewalk ever, [Alexei Leonov]. He was there as well. I had met him before. He came over here, and I think I showed him the full fuselage trainer when he was over. He was there at that. That's where I got to meet Valentina Tereshkova. That was a thrill.

ROSS-NAZZAL: I wonder if you would talk about building this crew. Very different from all your other crews. You've got some folks who are cosmonauts. How did you build that crew?

GIBSON: We got Bonnie to go over there to be Norm's backup. That's right. The Russians wanted a backup for Norm Thagard. I had gone out to the astronaut corps. Norm really wanted to do this, and he had been studying Russian. He, on his own time, had learned to speak Russian fluently. We had a hard time finding a backup. Nobody wanted to do it. I don't remember who it was, maybe Dave Leestma, or maybe it was George Abbey himself, that called.

I had offered, "Whoever goes over there to be the backup for Norm," they're going to launch, I think they launched March 14th of '95, "will be put on STS-71. You'll get to fly STS-

71 and go there even if you're not the one to do the launch aboard Soyuz." But even with that, oh, golly, it took some arm-twisting to get anybody to go be Norm's backup.

Bill [William F.] Readdy was the director of Operations in Russia, and he did a fine job over there, he had things really organized for us. Like the trip to Monino and all of that, he had that all preplanned for us to do.

It was the five of us training together. Five of us would be Charlie Precourt, Greg Harbaugh, Ellen Baker. I guess just four of us. Yes, just four of us training until Bonnie came back. That was probably the end of March. Then we launched in June. Bonnie was only with us for a while. We didn't really have a big role for her in the rendezvous and the docking. But what she did was she'd be on the radio talking to the Russians and telling them our range and our closure rate, because she had learned enough Russian to where of course she could handle all that.

She was always busy doing something. She wasn't part of the launch team on 71 or the reentry and landing team, but she was busy all the time. Trying to think of what all we had her assigned to. She had to be familiar enough with all the docking and all the rendezvous and all of that. She did attend certainly launch simulations and reentry simulations and also the rendezvous and docking simulations, but it was late in the game to really give her a big role on the crew.

The other four of us had trained together since September, pretty sure it was September, which was late per the template, because I dragged my feet so long. We should have been assigned before that.

Then the cosmonauts, five weeks before launch is when they showed up. We had a lot of training sessions for them, and there were three sets of the cosmonauts. There was Anatoly Solovyov and Nikolai Budarin, who were the ones that were slated to go with us. And then their

backups, and then the backups' backups. So if I'm remembering it right we had three crews of the cosmonauts that came over and started training with us.

Some of the sessions, they were off by themselves training. TechTrans was hired to go along with them because they had the really high-powered interpreters and the really technical interpreters that could help tell them about squatcheloids and quaternions and put that into Russian somehow.

We then started driving. Anatoly would come with me in my car when it was time for us to drive from Building 4 over to another building. Like I say, the final five weeks we'd be speaking Russian to them and they'd be speaking a little bit of English to us as well. Anatoly and Nikolai really had no function on the crew, other than to ride along. We didn't have any assignments for them. For that final five weeks, really it was to train them so that they wouldn't be a hazard to us or to themselves on the Orbiter. They learned not to open the side hatch. We could open our side hatch in orbit, and that would be instantly fatal to everybody.

That's when I think we got a whole lot more conversational in Russian, because I remember one day I picked up Anatoly in my car. I'm driving, and he looks over at me and goes, "Nye slushayu dvigatyel'," which is, "Not hear engine." That's how Russian is. We would say, "I don't hear the engine." But in Russian slushayu is the first person singular form of hear, nye is not, and slushayu is I don't hear or no. Nye is don't. And slushayu is I hear. But with nye it becomes I don't hear. And then dvigatyel'. So they don't have to say, "The engine." They can just say, "Not hear engine." That was why Russian could be challenging to learn.

ROSS-NAZZAL: I know we've e-mailed back and forth about the model, but I thought it would be interesting to talk about those models [of Mir and the Space Shuttle] that you decided to build here at the Space Center and take up with you in space for this mission.

GIBSON: That was actually my idea, because we were trying to think of what could we do that would be memorable and what could we bring back from space that we could give to the president of the United States and the president of Russia. I had seen that on Apollo-Soyuz they flew—let's see. What did they fly? I think they flew their mission emblem in pewter. Golly, I'm struggling a little bit. I have a book on it.

ROSS-NAZZAL: Yes, there's a pewter medallion I thought.

GIBSON: Okay, that's what it was. Yes, I wanted to say it's a pewter medallion. I think the Russians had half of it and we had the other half, and we joined them up in orbit, I'm pretty sure. I got to thinking, "Okay, well, we could do something boring like that too and just do a medallion." I don't really mean boring. I mean we could just copy them. Then I thought wait a minute, why don't we have the model shop make us a model of the Mir and a model of the Shuttle, and we can join them in orbit. We can do that with two of them, we can have two of them, and we'll give one to the president of the United States and we can give one to the Russian president as well.

So we did. We carried both of them up with us, both pairs, the Mir models and the Shuttle models. We carried those up with us. What we did for that little ceremony that we had—it was in the Spacelab where we actually did this particular ceremony—we handed

Vladimir the model of the Mir. I handled the model of the Shuttle. Then we put them together and let it float there in orbit.

Then we took one to President Clinton after the mission. The meeting with him in the Oval Office could have been a little, oh, I don't know, a little more extensive than it was. I think he must have felt like he was really constrained on time. I thought this was pretty special because I had my whole crew and the Russians. I had Vladimir [N.] Dezhurov and Gennady [M.] Strekalov. All eight of us went up to the Oval Office. I made a little speech about [how] we joined these models in space.

We had signed two certificates. The certificate wound up being laminated to a wooden base as the stand for the model. Yes, I think that was in the photo, of the ones that you've sent me the photo of, the one that's in the Clinton [Presidential] Library [and Museum, Little Rock, Arkansas]. It had in Russian and in English, "On this day spacecraft of the," and we filled in the date ourselves, and then all 10 of us signed it; both copies were signed in space.

I presented that to the president. He took a quick look at it, and he said, "Oh, okay, yes, well, that's nice." And he handed it to his assistant standing next to him, and then he just stood there looking at me like, "Okay, isn't it time for you guys to leave?" And it was. So it was a quick meeting.

My interpretation was that Vice President Al [Albert A.] Gore felt like we had been shuttled out of the Oval Office kind of quickly, and so he said, "Hey, you all don't have to leave right away, do you? Why don't you come down to my office, and we can chat about space and the International Space Station." I thought that was really nice of him and really outgoing of him to say, "Yes, come on down to my office."

His office is downstairs somewhere in the White House, so we went down there, and then we chatted with him, must have been 30, 45 minutes after that meeting. I think he might have felt like these guys came all this way. We only had a few minutes in the Oval Office, and we were out the door. It was a little bit memorable, but Al Gore made it a very nice event.

ROSS-NAZZAL: At least it's memorable.

GIBSON: Yes.

ROSS-NAZZAL: I did also want to ask. I don't know—this might be a question better suited for Public Affairs—but I still thought it was interesting. Your crew was the guinea pig for using the web to promote the mission. PAO had created this website called On Board STS-71. Do you remember that? Like I said, this might be more of a Public Affairs [question]. It was a new way to promote the mission, that way people could follow along on the web and see how things were going. I was curious if you were included in all those decisions.

GIBSON: I don't think we were, because I don't remember it offhand.

ROSS-NAZZAL: I wasn't sure. I find little tidbits. So I always want to ask, because I think well, there could be an interesting story.

GIBSON: Oh yes, good for you.

ROSS-NAZZAL: Did you think at this point that this was going to be your final mission? Had you and Rhea discussed [the issue]?

GIBSON: I wasn't planning on doing a fifth one. The fourth one went so well, I made one of the best landings that's ever been made, and that sounds like bragging, but what I'm talking about was the parameters. We're supposed to touch down at 205 knots. I was 204.7 knots. I was supposed to touch down 2,500 feet down the runway, and I think I was 2,495 feet down the runway, something like that.

The sink rate, once they took out the bias of the gyros, was 0.0 feet per second. When I touched down the wheels basically went asymptotic to the Earth, according to the sink rate. It was a great landing, and I wasn't planning on flying a fifth time. I was planning, "Okay, I will spend the rest of my time with NASA as the chief astronaut." Rhea was actually ready to leave after STS-47, because she really missed Tennessee, and she was ready for us to leave.

And then what happened? I got appointed to be chief astronaut. You can't walk away from something like that, so we stayed. Then it worked out that I needed to go do STS-71. So we wound up staying even longer. After the mission and all the postflight, it was too late to leave that year because of the kids in school, and so the plan became okay, well, then we'll stay to let the kids finish this school year, and then plan to leave summer of '96. That became the plan.

They weren't going to let me pick up chief astronaut right away again. I think I asked Dave Leestma. I said, "Dave, you suppose I could come over and be your deputy?" I think I asked him if I could come be his deputy.

He said, “Oh, I’d love for that.” That’s what I did. I wound up being deputy director of FCOD. Of course we had all the postflight stuff that we had to do, so I didn’t step into that till—I’m not sure when exactly. We landed on July 7th [1995], and by the time we finished everything it was probably September. From September until the next year I worked as Dave’s deputy.

ROSS-NAZZAL: Were there any hot issues that you handled? Any changes?

GIBSON: There was one, yes. I sabotaged a launch, one of the last things that I did before Rhea and I left NASA. Rhea and the kids moved in August of ’96. They moved to Tennessee. We had a place to live there because her dad had a guesthouse. So we didn’t have to buy a house there, which was good, because it took us a year and a half to sell our house in Nassau Bay. We bought when oil was way up here, and then when it was time for us to sell it it was way down here [demonstrates], so we lost money on that house. It took a year and a half to sell it at that. They had a place that they could move into.

I was going to go fly as a pilot for Southwest Airlines. Supposedly that was going to happen in August, but then that got delayed, and it didn’t happen until November. I wound up here by myself from August through November, when I finally started training with Southwest Airlines.

Rhea had actually stayed several years longer than she wanted to. She probably would have been ready, like I say, after my fourth mission. But getting offered the position of chief astronaut, you’re not going to walk away.

ROSS-NAZZAL: Right, absolutely. You said before you left that you had an impact on one of the launches.

GIBSON: Oh, I sabotaged the launch. Which one was it? This was part of the reason that Shannon [W. Lucid] wound up staying on the Mir Space Station much longer than expected. One of the launches came back, and we had changed the layup process in the booster rockets. When we'd assemble the booster segments together, we would clean the rubber insulation and then glue them together. They would clean the rubber with something they call trike, which I think was trichlorofluoroethane or something like that. The EPA [Environmental Protection Agency] decided that that wasn't nice to the snail darter. So we had to quit using it.

The new cleaner that we had didn't work. We launched, and we got the two booster rockets back and all of the joints, the rubber had leaked, so we had soot and hot gas in between all the segments of the booster rockets. There was a function or a design that was implemented in those booster rockets that was called a pressure relief flap. What that was was an intentional opening up above where the rubber got bonded together, so pressure would get into that flap and help push the rubber segments together. That held tightly enough that we didn't burn through. We should have burned through every one of those joints.

I want to say STS-79 with Bill Readdy as the commander was on the launchpad, and they really wanted to launch it the way it was. Tommy [W.] Holloway had asked all the elements to take a good hard look at it. We were going to have a big telecon to decide whether we had to roll back and destack and start over again with all the booster rockets.

I was actually on a trip somewhere, so I tied in by telecon to the big FRR process that they were having. Basically some of the groups were lining up. Engineering was saying, "Well,

yes, we'd be okay to launch like this, because the pressure relief flap saved us before and it'll save us again." They didn't say those exact words, but they said, "We believe we've got enough margin that we're okay." A couple other things were falling in line.

Tommy Holloway came up and said, "Hoot, you've been silent; I need to hear from you."

I launched off into a little speech. "We got lucky last time. We shouldn't count on being able to get lucky again." The thing is if you ask the crew, they're on their way to Disney World, "Are you guys okay with this?"

"Yes, we're okay with it, we're willing to launch it like this." They want to go as soon as they possibly can. I learned over the years you don't even bother to ask them. Of course they're going to be go, because I was always go. I don't want to wait a day longer. I said, "We got lucky on that one. We should not tempt fate and try to do it again. We know how to fix this and we should do it."

After my little speech then the other ones said, "Yes, okay, we agree with Hoot." So I sabotaged that launch, but that might have been a disaster. We knew it wasn't right. Wait a minute, what does this sound like? This sounds like *Challenger* [STS-51L].

"So we know how to fix this, and we need to fix it," I said.

That was one of my last things before I left. My last day at NASA was November 13th of 1996. I only had a half day, and I was checking out. I don't know if I had any government property to turn in or anything like that, but you had to go through the process of signing out, getting a washed-up has-been no longer badge. I was so depressed.

That was a half day because that afternoon, November 13th, I had to fly up to Dallas to start training the next day with Southwest Airlines. I was so depressed after 18 years, and I just couldn't believe I was leaving. I'll never forget it. I was so sad that day. You would think okay,

excitement, “We’re heading for Dallas, we’re going to start training to fly airliners.” Uh-uh. I was depressed, thoroughly depressed after 18 years. We’ve been back for some of the reunions. They’d be showing videos and slides of what the guys have been doing since we left, and I would be saying to myself, “How could we ever leave this? How could we ever stand to leave this?” But I guess we needed to.

There was another philosophy as well that I had said to myself a number of times, “Okay, you’ve hogged five flights. Haven’t you been greedy enough?”

“Do you always talk to yourself?”

“Yes.”

“Haven’t you been greedy enough?” Yes, I had been greedy enough, because I’d get to be commander every time I go after this. It’s time I got out of the way and let the younger guys and gals have a turn. So there was that aspect of it as well.

ROSS-NAZZAL: You had some great missions.

GIBSON: Oh, golly, yes. Sure did.

ROSS-NAZZAL: We always like to end by asking folks what do you think was your biggest challenge while you worked here at NASA, if you had to pick one.

GIBSON: If you had to pick one. Oh my gosh, I don’t know if I can pick one.

ROSS-NAZZAL: If you can’t pick one you can list multiple.

GIBSON: There's been lots and lots of them. I joke around about one of the biggest challenges was trying to learn Russian, because I am an engineer. Science and math and calculus, I'm good at that stuff, but [not] languages.

I vividly remember coming in when I first got here, and I was a highly experienced jet fighter pilot and test pilot. I flew combat in Vietnam. I had all kinds of experience. I got here, and all of a sudden I don't know anything. I don't know how I get hydraulic power. It was on a jet engine, and the jet engine is spinning so it turns a pump. How do I get hydraulic power on a Shuttle? How do I do temperature control on a Shuttle? We were mostly air-cooled in jet fighters. I don't know how we navigate. I don't know how we communicate. Yes, we had radios. You key the mike.

It was a huge challenge walking in the door having been a very experienced jet pilot, and all of a sudden you don't know anything. Some of your self-esteem suffers a little bit when you're sitting there saying, "Boy, I'm dumb. How am I ever going to learn all this?" I think from day one it was a huge challenge.

As you went along the trainers were so good, and all the study materials and everything that we had to learn everything from made it flow so well, that all of a sudden you got to the end of a training cycle and said, "Yes, I'm ready to launch." It's a tribute to what we've put together here at the Space Center.

ROSS-NAZZAL: What do you think was your greatest accomplishment, if you had to pick one? I know you were involved in so many.

GIBSON: Certainly all the missions went well. One of the things that I always would say to my crews when I was commander, when we would get formed up and we'd have our first meeting as a crew, was, "Okay, look, you guys, this is going to be challenging. Anybody can go do this and make it look difficult. We're going to go make it look easy. It isn't easy, but we're going to make it look easy because we're going to do it that well. We're not going to whine about what the challenge is, we're just going to go do it and make it look easy."

I think for the most part we did that on the missions that I was commander of. We didn't whine about things, we didn't complain that this is too hard, this is too difficult. "It is challenging, and it's not easy. But you guys, we're going to make this look easy."

The other thing I also would say is, "And at any point if we're not having fun, we're doing something wrong. This is the most exciting thing in the world that we're getting to do. It ought to be fun, and if it isn't fun we're not doing it right."

I do feel though that one of my biggest achievements when I was chief astronaut—because I got feedback. I wasn't looking for feedback, because my job is to support you guys, is what my job is. But one of my astronauts, who wasn't really known for handing out compliments, said to me, "You were liked as chief."

ROSS-NAZZAL: That's nice. That really is. One of the things that I appreciate when I talk to so many of the people that you work with is that everyone is so humble.

GIBSON: Astronauts are humble?

ROSS-NAZZAL: Especially the test pilots, especially the test pilots that I talk to.

GIBSON: Test pilots are humble? Oh my gosh.

ROSS-NAZZAL: Yes I don't know where Tom Wolfe came up with that stereotype, but I've certainly not experienced it on my side of the table.

GIBSON: It was funny. Before I was coming here to interview, one of the other test pilots back at the flight test center—I said, “I understand I got to talk to a psychiatrist.”

He said, “Okay, one of the things that you don't ever do is you don't ever fill in the words for a psychiatrist. If the psychiatrist is asking you, ‘Well, so would you say that test pilots are—’ ‘Arrogant?’ Don't fill it in for them.” Humble? Shoot.

ROSS-NAZZAL: That's my perspective. Maybe somebody else would say something else.

GIBSON: That's complimentary, so thank you.

ROSS-NAZZAL: I've enjoyed this. I don't know if there's other anecdotes you would like to talk about or other stories you'd like to share.

GIBSON: I guess they're not kicking us out of this room, it looks like. Somebody started to open the door.

ROSS-NAZZAL: I don't think so. I saw somebody stick their head in, so I wasn't sure. The secretary told me I had it for four hours. I blocked it first thing this morning.

GIBSON: Let me think about it for a moment. Of course when we leave I'll think of about a dozen of them.

ROSS-NAZZAL: If you come back to Houston we can always do a follow-up.

GIBSON: We can do a follow-up, sure.

ROSS-NAZZAL: Absolutely, we're always open.

GIBSON: We probably haven't covered everything.

ROSS-NAZZAL: I'm sure that we haven't. There's probably a lot that you have knowledge of that I don't. We have limited resources. The further we get into the Shuttle Program, the less documentation that we have. That's why these interviews are so important and so vital, because we just don't have those records.

GIBSON: Yes. I wind up remembering things as we're sitting here talking about it too.

ROSS-NAZZAL: If you do come back, like I said, our door is always open. Don't feel like this is the last opportunity. We'd be happy to see you. If at some point you and Rhea want to do a joint interview, I think that might be fun.

GIBSON: Oh, that'd be fun too. Yes, maybe one of these times when we're back for reunions. They would schedule reunions about every two years. I think we missed—I don't remember what our problem was. We might have been out of the country. She really likes cruise ships. We're into these deals where we can go for free as speakers on a cruise ship.

I'm always telling her, "No, not another cruise. I made three cruises in the Navy." For a total of what, how much time, well over two years. "No, I don't want to make another cruise." She'd sign us up for two or three a year if I'd let her. We've been doing those. Although the virus saved me from one this year.

ROSS-NAZZAL: There you go. No one wants to be on a cruise ship right now.

GIBSON: That's for sure.

ROSS-NAZZAL: Thank you so much for taking time, Hoot. I appreciate it.

GIBSON: It's always fun. Yes, it's always fun.

ROSS-NAZZAL: Yes.

[End of interview]