



NASA Johnson Space Center Oral History Project Edited Oral History Transcript

Margaret Rhea Seddon
Interviewed by Jennifer Ross-Nazzal
Murfreesboro, Tennessee – 20 May 2010

Ross-Nazzal: Today is May 20th, 2010. This interview with Rhea Seddon is being conducted in Murfreesboro, Tennessee, for the JSC Oral History Project. The interviewer is Jennifer Ross-Nazzal, assisted by Rebecca Wright. Thanks again for agreeing to spend some time with us today. We certainly appreciate it. Know your schedule is busy.

Seddon: It is.

Ross-Nazzal: I'd like to begin by asking you about how closely you followed the early space program.

Seddon: I don't think I followed it really any closer than most of the kids my age growing up. It was exciting. It was in the news. I can remember that we stopped classes to watch TV. I can remember just being fascinated by the whole thing. I kind of got to see the beginning of it, because we went out and watched Sputnik at night. I was old enough to understand what was going on when Sputnik launched. So I think I followed it the way other kids did. I was not one of those people who suddenly became focused on space. I was a little girl growing up in a small Southern town, taking piano lessons and ballet lessons, and assuming that I would be like my mother and be a nice wife in a nice home someday.

It never occurred to me that that would be a potential career or would be something that was open to me at the time, but I thought it was incredibly exciting. As I say, it was one of those defining moments of my generation. In that respect I followed it reasonably closely.

Ross-Nazzal: Tell us about your memories of the Apollo 11 landing.

Seddon: The buildup to it, the fact that it was a competition with the Russians, the fact that there was so much news not only about the rocket ships but about the people, it was just incredibly exciting. I'm sure everybody remembers where they were and what they were doing the night that they landed on the Moon. My father had taken me and some friends up to a lake to go water-skiing near here. We spent several days. We all sat that night, exhausted from being out in the sun all day, and stayed up all night watching the Moon landing. It was incredible to me. My father, it was beyond his imagining. I just remember it, again, as something that would be remembered forever, and something that so many people here on Earth were following.

The tension and hoping that it would go well, understanding how new and different it was to do something like this. I think people had worried about horrible things that could happen. We were all aware of that. The fact that it went off, to my view and that of my friends flawlessly—I'm sure there were little glitches along the way, and you read back about how they were just about out of fuel—but that wasn't obvious to any of us. It looked like it was just perfect and beautiful.

It was awesome, because we could go out that evening and look at the Moon, and have the awe and wonder that there were people there. I have the remembrance of thinking this was the beginning of space exploration off this planet. I think we all had big dreams about what we would be capable of doing if we could do that. I think that all of us expected that success to be followed by even greater leaps, radically, because we were obviously the foremost spacefaring nation on Earth, and we would continue to do things like that.

Ross-Nazzal: Tell us about your interest in science and medicine as you were growing up.

Seddon: That's interesting because that was linked to the space program too. After Sputnik there was of course all the concern that the young people of our country were behind in science and engineering, so there was a big push to improve what we taught children of all ages. I went to a three-room eight-grade parochial school. Believe it or not, I can't remember ever having any science before the seventh grade. I think the problem was that the nuns didn't have any background in it. They couldn't teach it, and they had to bring in a lay teacher from the community. I don't remember how often she came, maybe a couple days a week, maybe one day a week, and taught the seventh and eighth graders—probably sixth, seventh and eighth, because sixth, seventh and eighth were in one classroom—science.

That was my first exposure to science, and perhaps because it was new and exciting, and it was a national imperative, I got excited about it. When people ask me, "When did you get interested in space," I had to think back about that. I remember in seventh grade we had to do a science poster for our final grade. This was before [Yuri] Gagarin flew in space, and there was a Life Magazine article about what might happen to humans when they went away from gravity. There were all these swell pictures, pictures of the man going into space, things that might happen, and G-forces. I just thought that was interesting. Plus it was something I could copy well onto a poster.

I got interested in that aspect of things and really found that I was more interested in the life sciences than in the other sciences that we were taught about. My eighth grade poster was on [James D.] Watson and [Francis] Crick's DNA molecule. It was just fascinating to me. Another colorful Life Magazine article that I had to dig into, because it was a little bit above my grade level reading, to figure out how does this really work. But it was described well about the double helix, the letters, how they bound, and how it split apart to send messages and replicate itself. That was fascinating to me.

I did my little poster with all the little colors and everything, and it was pretty obvious to me at that point in time that I really liked life sciences. I began to read. My dad got Time Magazine, and I would read the science section and the medicine section, and those were the things that to me were just really exciting. I continued that interest through high school.

I took all of the advanced classes that I could. I went to a county high school in a little town in Tennessee. The school was fairly large, but there were not an awful lot of advanced studies. I took biology, chemistry, physics, and the requisite math to get into college, but enjoyed the biology part more than anything. When everybody else was saying that rat dissections were icky, I'm over there digging around in this rat thinking this is neat stuff. Again probably not a very sophisticated high school, or not

very advanced science. At least I had figured out by the end of high school that I probably wanted to go into health care.

My father was an attorney, was on the board of the hospital here. Interestingly enough, he could tell me what the salaries were for some of the physicians that were employed by the hospital, the pathologists, at the time. He could also tell me what the salaries were for the nurses. It was like, "Hm, okay, well, I'll file that away and see where I go." Then when I was looking for colleges I wanted to find out what was the best college in the country in life sciences, and that's how I ended up at Berkeley. Went to the University of California.

Ross-Nazzal: Quite a change.

Seddon: Quite a change. I applied, and about that same time the Free Speech Movement out there took place. That was in December I think of '64, and I was applying for the fall semester of '65. I think there was concern on the part of my parents about whether they wanted to send me there, but everybody thought, "Well, that will just blow over." It was a huge school, probably twice the size of my hometown at the time. I was fairly naive. I didn't know anything. I was going to go to college. We didn't visit there. I think I visited maybe two colleges, but that was really the one that I wanted to go to because they obviously had a lot of graduate programs in life sciences, so the undergraduates could take advantage of fairly advanced classes.

I tried several different things in college. I loved English. I took a beginning course in business, and that was fascinating. I like a lot of things, but as far as planning a career and what I could see myself doing for the rest of my life, it was life sciences. Of course the women's movement came in, and that factored into everything. It's like women could do things like that. So I benefited from that part of history too. Women were saying, "Why can't women be doctors, why can't women be pilots, why can't women do all of these things that we have assumed they couldn't do in the past?" That's how I ended up going into medicine.

Applied to medical school. My grades were not great at Berkeley because I had a lot of work to make up when I first got out there. I was just not as well prepared as the people who were competing for the grades, but my grades were good enough. The University of Tennessee [College of Medicine] I think at the time wanted to attract more women and minority students. They really wanted students that had been to really good schools. Berkeley obviously was excellent. I was able to get in there and did pretty well.

Back when I was in college, my dad helped me get a job at the local hospital. They were opening up the first intensive care unit around here the summer after my freshman year, and I was going to work in the new—I don't remember what it was, coronary care or intensive care—I was going to work there, and it was delayed in its opening. So they sent me to surgery. That's how I got interested in surgery.

So the serendipity of life. I was pretty sure when I started medical school that I wanted to be a surgeon of some sort. I think my medical school class started with 115 students. They liked graduating a class of 100, so they'd take a few more. There were six women so it certainly wasn't a balanced group. We did have, I think, three black students in the class. They were trying to make progress in opening things up.

When I graduated from medical school, I applied to several surgery programs around the country, but I don't think they were prepared to take women. I did get a slot with the University of Tennessee, where I went to medical school. They knew me; they knew I was interested. I'd worked with a number of the surgeons there who knew I was a hard worker and serious about doing this. I was the only woman in the surgery residency program. I think I was probably the second woman they had ever accepted so that was interesting.

I had to consider what field of surgery I could go into and expect to get a practice in. I considered pediatric surgery, and I considered plastic surgery. I was really aiming in the direction of plastic surgery. Also got interested in the nutrition of surgical patients, because sometimes we'd operate on a patient, and we could fix what was wrong but they couldn't eat for a while. They just basically starved to death; they never healed. We were beginning to be able to feed people by vein. I got interested in that, so did some research in that. When NASA came along, I had a varied background that I think was very helpful to me.

Ross-Nazzal: You had mentioned the women's movement, and it just brought to mind a question. Did you consider yourself to be a feminist at that point?

Seddon: No. I thought they were a bunch of crazy people, but I thought their ideas were good. I guess having grown up in the South where you're supposed to approach things softly and peripherally, I thought they were terribly strident. Many of them were anti men. I'm certainly antidiscrimination, but not the fact that all men are bad. As I say, I was never involved in that. I'm certainly glad that they brought about change, but they were just a little too far radical for me. The interesting thing about Berkeley is you really had to figure out where you stood on a lot of things, whether it was gay rights, women's rights, or socialism, and communism. I just had a lot of beliefs that I had to be able to explain and had to think about, so that was a maturing thing at Berkeley.

I think I grew up a lot from being from a small town to going and seeing just the other end of the world in many ways. The women's movement I certainly benefited from, but I thought at the time they were just taking too radical an approach.

Ross-Nazzal: When did you hear that they were opening up applications for the Space Shuttle class?

Seddon: That was interesting. A fellow resident had done some research with NASA, and I said something to him about, "Wouldn't it be swell to go do that someday, fly in space?" He told me it was just an offhand thing, "hey, some friends of mine say that they're taking applicants for the Space Shuttle Program." We had seen the beginning pictures of the Space Shuttle. He said, "I hear they have an affirmative action program." The government at the time, this was in '77, was getting pinged that they were not offering jobs to women the way they should. He didn't have any idea where I should apply.

The only thing I remembered was that astronauts trained somewhere in Houston. I addressed an inquiry letter—dumb me—this was of course back before you could just Google stuff. Sent a letter to NASA, Houston, Texas, and it got to the right person. I got the information back. I wrote for the application and sent it in.

Ross-Nazzal: Tell us about the application itself. What did that involve?

Seddon: It was pretty vanilla government job stuff, plus a lot of things about your background. "List every place you've ever lived. List any time that you've ever been out of this country," a lot of background check stuff. To me it was like this is the first step. If you can make it through all of these applications, then you're serious about doing this job, because there were just reams of paper. Name and address 30 times, because it's a bunch of different forms. They sent some basic information about the Shuttle Program, about what kind of people they were hiring for the first time. They wanted half the group to be pilots and half to be mission specialists who would be basically in charge of the cargo.

They did say, "We're open to women and minorities, etc., and we don't discriminate based on whatever." It was only very basic information. Again, either I was too busy or too dumb to do an awful lot of

research on my own to see, "What is this anyway?" I just filled out the application and figured, "Well, I guess if they want me they'll come and tell me what they want me to do or write me." The deadline for the applications was I think July 1st of '77. Interestingly enough, again serendipity, they were hiring people for July 1st, 1978, and I was finishing my residency June 30th, 1978, so it was like, "Hm, that's nice." I wasn't married, had no attachments. So it was feasible. I was going from a general surgery residency probably into getting my PhD in nutrition. It was an obvious break point for me, something that I could go and try and if it didn't work out I could go back to my original plan, a surgical subspecialty or a PhD.

It was like that all fits. I knew that they were going to interview people that they were interested in. Got a call in August of '77 and asked me if I wanted to come for an interview. I was at least smart enough to ask a few questions at that point in time about what's involved. They wanted me to come for a week. "What's involved? What will happen? Who else are you interviewing in that week? How many of us? Are there other women," and some just basic stuff. Really they just said, "We need to put you through some physical tests. It's not a physical fitness thing. You need to bring running clothes. There will be an interview. There will be other exams. We just need to make sure you are qualified for the job."

I went down there probably the latter part of August. It was interesting; they did not tell me that ours was the third group of people that they interviewed. The first two groups had been test pilots. This was the first group that had women in it. So needless to say, there was a lot of press interest.

Ross-Nazzal: Can you tell us about that?

Seddon: Yes, it was interesting. Jay [F.] Honeycutt—I don't know whether you have spoken to him—was the person who called me to ask me if I wanted to come to the interview. We all arrived on Sunday afternoon at the Clear Lake airport, and we had all flown into Houston Intercontinental and then gotten on a small commuter plane. You looked at these people on the plane—the very fit ones, the smart ones—they were looking at everybody else; you figured were probably in our interview group, and they were.

Our first meeting was Sunday night with George [W.S.] Abbey, Jay Honeycutt, Sam [L.] Pool about the physical exam, and George welcomed us and told us a little bit about things. I think Jay was in charge of organizing everything. He told us, "Here's your schedule; here's where you need to be. We're happy to take you from here to there. Here's how to get in touch with people." Then we broke up for the evening, because they'd had the meeting, I think, in the hotel where we were staying.

After the meeting Jay came up to me and said, "The press is interested in the women in the group. Would you mind speaking to them briefly here on your schedule between this and this?" What am I going to say? "No, I don't want to do that. I don't know how to do that." Never been interviewed, never had anything like that, don't know squat about what this is, I'm just here, but I said, "Sure." He said, "They want to take pictures, so we'll put you on the treadmill and create a nice picture for them to take." Okay. What am I going to say? I agreed to do that. I had a little opening in my schedule Monday morning.

I had really never done anything like that before, but they had a group of reporters that came in, snapped pictures, and then asked me some questions. Of course I made my first really dumb mistake. A reporter asked, "Don't you think it's about time NASA took women?" I said, "Yes." So the quote in the paper was, "Astronaut says it's about time NASA took women." Jay gently took me aside after that and said just be careful of the way you phrase things, and be careful about the questions that you're asked, because it can sound funny. They were very nice about it, but I thought, "Oh, I'm out of here."

The other interesting thing was I was the first one the Selection Board interviewed. After this fiasco I've got to go to the interview board on Monday. Once again I don't know squat. We were told Sunday night write an essay about why you want to be an astronaut. I had no paper. It's written on little notepaper out of the back of my schedule. All I can say is, "It's just fascinating. I want to learn what happens to humans; this is my interest, amen." What am I going to say? I don't know anything about the program yet. So anyway I go for my interview. I thought about it a little bit, and I thought if I'm the first woman that they interviewed, what are they looking for, what kind of answers should I give?

I had no idea, but I don't think they had any idea even what questions to ask, because a lot of them were off the wall.

Ross-Nazzal: Can you tell us some of those questions?

Seddon: Well, first Joe [Joseph P.] Kerwin was in there. I knew he was a Skylab astronaut, a physician. Dr. [Carolyn L.] Huntoon was in there. She had met with us I think the night before. Somehow I knew her, and I knew she ran the biomed lab. I knew that there were two people who understood a little bit about medicine. The others were John [W.] Young, George Abbey, and Jay Honeycutt and people that I didn't have any idea what they knew about what I did.

They asked me to tell them a little bit about myself, and then I started talking about my health care experience. I could tell from Joe Kerwin's eyes that they were glazing over. I was hoping that he would understand the importance of the work that I was doing. I could tell that he didn't really know anything about that, he'd been out of medicine for a long time. John Young obviously was not interested so I had to summarize and speak in terms that people could understand.

Most of the questions were just about regular stuff. "How would you feel to be one of the first women," and things like that. Then there was this crazy question, and I don't even remember who asked it. "Suppose on the plane going back home you were to meet a man that you fell in love with, and he didn't want you to do this kind of work. What would you do?"

Ross-Nazzal: That is a bizarre question.

Seddon: It isn't a question that you would ask nowadays. I don't think at the time it was verboten. I just basically said I wouldn't fall in love with somebody that wanted me to give up all the things that I wanted to do in my life, end of discussion. It was very pleasant, but it was obvious to me that they were used to interviewing fighter pilots. They didn't quite know what to ask scientists, because you could tell them basically what you did, but they didn't really understand enough. If you were a fighter pilot they could ask you what kind of plane [you flew], and how do you handle emergencies. They asked me about my surgery and emergency. I'd done moonlighting in emergency rooms, and they asked a few questions about dealing with emergencies and things like that.

I had no way of knowing how I'd done. I think the most interesting part of that whole week, to me, was the psychological interviews. There were two psychologists, maybe one was a psychiatrist. There was the "bad" guy; he would ask you really difficult questions, just like, "Have you ever wanted to kill yourself, and were you ever abused as a child?" "No, and I hope you believe me when I say no." Terry McGuire, the other psychologist, was just sprightly and interesting, and he asked questions like, "If you came back reincarnated what would you want to come back as?"

I think he was fascinated by the scientists. He had interviewed astronauts—fighter pilots—for a long time, and they're very much the same. Then suddenly there were women, there were minorities. They're Jeff [Jeffrey A.] Hoffman college professors, who are just in a different world. He chuckled and laughed, and we had a nice discussion. He asked the requisite questions, I'm sure. Then we went to lunch and sat and talked about, "Do you think it's going to be different with women?" Just very

interesting sort of thing.

The rest of the week was physical exams, and obviously some presentations on plans for the Shuttle, what sorts of things would be flying, and what the flight would be like. They gave us a nice slide set so that we could go back and talk about the Shuttle to other people.

It was just a whirlwind week, and you had no way of knowing. I knew that I didn't really flunk anything. There weren't any physical things where they said, "Oh, my gosh, you've got a heart murmur, or there's something wrong with you. You're disqualified." I made it through the week. Spent the last day buying souvenirs at the souvenir shop so I could tell my grandchildren someday that I was interviewed.

Ross-Nazzal: Anna [L.] Fisher had told us, and I was just curious, since you said initially you weren't thinking about becoming an astronaut, that she laid all her cards on the table and told the selection board that she was interested in having children at some point. Did you do the same during your interview?

Seddon: It never came up. She was married at the time so that was a little bit of difference. If they had asked me, "Do you want to marry and have children?" I would have said, "Of course." One of my goals would be to have a normal life. What could I say? I don't remember that it ever came up.

By the way Anna and Shannon [W. Lucid] and I were all in that first group to be interviewed together. I think there were six women in that group that they interviewed. We didn't feel like we were standalones in a gang of men. Jim [James P.] Bagian was also in that group. He didn't come in until the 1980 class. It was an awesome group of women. There were several that were MD/PhDs that had done NASA research. I'm going, "Oh man, what have I got to offer to compare with that?"

You looked at the competition. The men were awesome too, just really really smart people. Several flight surgeons. Obviously Jim Bagian was very outstanding. Just incredible people. I couldn't imagine that I would compete with them. I don't know why they decided that I should come in and the others shouldn't.

Ross-Nazzal: Tell us about that phone call. You must have been surprised, since you thought you blew it with the media interview.

Seddon: Yes. It was a difficult last half of the year I guess, or last quarter of the year, because they told us that they would make the selection before Christmas and to make sure that if we were out of pocket that someone knew how to reach us. Christmas came, and I took a week of vacation and went out of the country someplace and kept filling them in on where I would be. They said, "Well, we're hoping it will be soon." Every day I would look in the newspaper assuming that I would read a list of the other people that got selected, because they didn't really tell us how they would let us know.

So January 16th, 1978, I was just coming into the hospital, got a beeper page, and stopped by the receptionist's desk in the hospital. There had been a story in the newspaper in Memphis [Tennessee] that I was being interviewed, further back in the paper. I was at the VA [Veteran's Affairs] hospital doing a rotation at the time. The people at the hospital knew I was waiting for an answer, so the receptionists are sitting at the front desk, "Somebody from NASA is calling you." It was George Abbey, and he did the usual, "Good morning. How are you?"

I'm going in my mind, "Tell me, tell me, tell me." He said, "Well, we were just calling to see whether or not you were still interested in this job." I said, "Absolutely, very much." He said, "Well, we'd like for you to come down in July and join the astronaut class of 1978."

Anna and Shannon and I during our interview week—I guess that's where I got to know Carolyn Huntoon; she took us all out to dinner—we got together and tried to guess how many women they were going to take. We figured they wouldn't be cruel enough to take one, so they were probably only going to take like two or three just to test this out. So when George called I asked, "How many will be in the class?" He said, "There are 15 pilots and 20 mission specialists." I said, "How many women?" He said, "Six." I thought, "That's great. That's really great." Looking back you'd say, "Well why not half of us?" But at the time that was fabulous. I asked him the names, and I knew Shannon and Anna, so that was nice. He told me about Kathy [Kathryn D. Sullivan] and Judy [Judith A. Resnik] and Sally [K. Ride].

He said, "Please don't tell anyone except maybe your immediate family before noon. There will be an announcement at noon. And you might want to talk to the public relations people at your hospital, because there will be considerable press interest." I didn't know public affairs people or news people or anything like that. It was a wild day. Obviously it came out, a big news story, in the newspaper and on the news. A lot of old friends called. It was fabulous.

Then getting ready to go. They invited us down. Gosh, I think we went there in February where they introduced us to the world. Then I think we went down another time in April for orientation, but it really gave us a chance to find housing. Then we started in July.

Ross-Nazzal: Where did you end up living when you first got to Clear Lake?

Seddon: Now I was going to have a real government salary, I think it was \$21,000, which was just a little bit better than what I was making as a resident plus my moonlighting. It wasn't a lot of money but it was a regular salary. I decided to buy a condo, and my dad went down with me, and we looked around. He fronted the down payment. The bank would not give me a loan without his cosignature because I didn't quite qualify. I was like \$2,000 off from qualifying. My dad is saying, "She's a doctor; she's been moonlighting. She'll continue to moonlight. She's an astronaut." They're like, "Sorry, you need to make \$2,000 more per year to qualify for this loan."

I don't know whether it was discrimination or not. They had their rules. It taught me that in that vicinity maybe astronauts were a dime a dozen, and it didn't matter that you were an astronaut. You were just another person.

But anyway, got my first home of my own at age 30. That was nice. It's like finally getting through school and training and being a grown-up and having a real job. Plus not having to take night and weekend call and things like that was nice.

Ross-Nazzal: Tell us about those first couple weeks being an AsCan [Astronaut Candidate], walking into those Monday morning meetings. What were things like?

Seddon: I remember the first Monday morning meeting that we went into. I think we started not on July 1st but on the 10th or something like that, on a Monday morning. It was like, "Report to work Monday morning." It was the all-astronaut meeting. I can remember the guys that were there. There were 29 that were still there, I think, and 35 of us. Most of them were considerably older than we were, and there were a lot of people in our class that looked considerably younger than they were, Pinky [George D.] Nelson, probably me, Sally. Not only were we young, but we looked young. There were beards. Jeff Hoffman had a beard; Ron [Ronald E.] McNair had a beard.

The old guys are sitting watching us come in, and you could feel that they were going, "Oh, my gosh, what have we gotten ourselves into? Who are these people?" And, women for the first time. We were all new and shiny-faced. The military folks, I think it wasn't a difficult transition. It was just a new squadron

for them. For those of us coming from very diverse academic backgrounds it was, "What do we do? What do we say?" Most of us smart enough to not say anything. We were asked to introduce ourselves, I think.

That was our indoctrination into what was going on in the astronaut program. They did the regular meeting and left us to pick up schedules and start going to basically orientation type meetings. What do you all do here, what's the plan for getting you trained to be astronauts?

Ross-Nazzal: What do you think was the initial reception to having women in the office?

Seddon: I think they didn't quite know what to do about that. I remember there was a People Magazine article.

Ross-Nazzal: I think I've seen that. Is it of the six of you? You're dancing?

Seddon: I'm dancing. The older astronauts had met us when we'd come down for the initial visit. Some of them had met us. I think it was Wally [Walter M.] Schirra who was quoted in the newspaper, something stupid about women. I remember one of the astronauts, and I won't mention his name, because he would be embarrassed at this point in time. He was asked, "What do you think about these new women coming in," and he said, "Well, some of them are kind of cute." He didn't mean anything by it. They didn't understand what it was going to be like. Mike [Richard M.] Mullane, you've probably seen his book [Riding Rockets: The Outrageous Tales of a Space Shuttle Astronaut]. He said that the two things he had to figure out that first day of work was what to wear, because he'd never worn anything but uniforms—school uniforms, military uniforms—and how to work with women as equals.

There was a little bit of moving around, trying to figure out what was correct, what was offensive. I think there was a broad range of different attitudes in the women about whether we could take kidding or whether we found the things that some people thought were funny were not funny.

We had to work that out. I came out of a world where it was all men anyway so to me it wasn't a big deal. I was used to working only with men for the most part. Anyway they worked it out; we worked it out. I think we had to prove that we were serious about what we were doing, that we were willing to do whatever they needed us to do: water survival, parasail training, scuba training. We could carry our own parachutes out to the airplane, and we could handle emergencies. I think they were all watching to see whether or not that was really going to work.

Ross-Nazzal: People in your class, most of them were used to working with women, except for Mike Mullane and some of the military folks. Was there a difference between some people in your class? Maybe the academics who had worked with women?

Seddon: No, quite frankly, I don't think many of the academics had worked with women on their level, because when people applied to the astronaut program, they wanted people with at least a bachelor's degree, science, math, or engineering, preferably advanced degrees, and preferably with experience after that. I remember people saying of all the women that applied, and I think there were about 1,500 of them, many of them didn't have advanced degrees, and their science degrees weren't too strong. There just weren't an awful lot of women in those fields back then. The academics certainly had more experience working with women than say test pilots, but women were still very much in the minority in all those fields, I think. Because if you talk to most of them, they will tell you in their graduate schools it was mostly men. I think all of them had a little bit of difficulty, and I think some of them didn't really want us there.

I've heard some stories about people that were upset that they were going to take women. They just didn't feel that needed to be done. That was the old school. I don't think most of them felt that way but some of them I think did.

Ross-Nazzal: Tell us about that first year of training that you participated in as an AsCan. You mentioned for instance some of the survival training that you participated in.

Seddon: When I signed up, no one said, "Here's the things you have to do," or "Here's the training that you have to have." When we went through interviews, they'd taken us out to Ellington [Field, Houston, Texas] and let us sit in a T-38 and told us that we would have to do flight training. They weren't going to put us through the Air Force pilot training. They were going to just train us on the NASA syllabus to be backseaters, but that was about it. They began rolling out these different things. Water survival was one of the first things that we did, because if we were going to fly in the T-38s we had to understand how to use the ejection seats and then be capable of parachuting down in the water and staying alive. So they sent us to that.

For a female that hadn't done a lot of really exciting things, that was pretty exciting and probably not something that I would have ever chosen to do. But it was a rite of passage. I certainly wasn't going to chicken out. It turned out the folks at Homestead Air Force Base [Florida] were used to training a lot of people coming through, probably 18-year-olds and little people and big people.

They made it easy. They said, "Here's what we're going to do; here's what you need to do. Here's what will happen. If you have any trouble, we'll pick you up and we'll do it again." It was very graduated. First you do this, that's a little hard, and then you do this, that's a little harder. Then you do these things, that look exciting, but here's what you do. "Tell me the steps. I just told you. You tell them back to me. We have a safety boat here." It wasn't as difficult as I imagined it would be. We all just got through it, had a good time, had a chance to get to know each other, and have a beer after work. It was part of the adventure.

Then we did parasailing in Oklahoma. We didn't actually parachute out of planes, but we did parasail. There was one of the women who had some difficulty with that because you had to be able to land on the ground and do a parachute roll. She ended up spraining an ankle or a knee or something like that. I came home with bruises all over the place, but I wasn't going to show those to anybody or complain about it at all. That was physically demanding.

The scuba diving was challenging for me because I'm not a swimmer. I had to work hard at being able to do that, to be comfortable in the water, to be comfortable under water, to be able to tread water for 20 minutes. I had to do some additional work. It was frustrating, but I was just determined that that was not going to stop me from being an astronaut. Then they found out that I was too small for the spacesuit so I really didn't have to do that training anyway. The suit training, especially for small people, that was physically demanding.

Lots and lots and lots and lots of lectures. Visits to the NASA Centers. It was all a group of just wonderful people. Alan Bean was our training manager and was just the world's nicest person. Carolyn Huntoon helped us get through it. She was there to advise. We would get together with her periodically and ask about, "How do you get ahead in this organization and what are the things you need to not do?" One of her I think words of wisdom was, "The most important thing that you can do here is to use good judgment. Whatever you do, use good judgment," because if you do dumb stuff and off-the-wall stuff and things that you shouldn't be doing, NASA doesn't appreciate that. Whether it's public or no one in the public knows it, but we know you did it, it could go against you. I think that proved to be so over the course of time.

It was a good year. We of course had to learn how to fly the T-38s, which was a bit of a challenge. That wasn't particularly physically demanding. It was a little bit scary, I guess, because they'd tell you this airplane crashed or these people parachuted out but they broke their neck. It was just like, "Okay, guess I need to do this," but again a little bit risky.

Then we got technical assignments, on the job training to follow a fellow astronaut around. I think I followed Fred [W.] Haise around to a bunch of engineering meetings. I had no idea what they were talking about. The terminology—they used acronyms that we hadn't really been introduced to yet. They used engineering terms. I would just sit and write down stuff I didn't understand and then I'd ask Fred afterwards, "What do they mean when they say this is three sigma off?"

He'd say, "Well, that means that it was outside the range of, you know, the bell curve." "Oh yes, okay." We would call that four plus in medical terminology. That's four plus bad. I had to learn what's an inertial measurement unit [or an] auxiliary power unit. We began to get lectures in all those systems, but it was gibberish to me. It was facts. It was kind of like anatomy was the first year of med school, just a million facts that you had to memorize, and you had no context to put them in. My classmates teased me about falling asleep in those classes, but they could have been speaking Chinese for all I could understand. Why did I need to know that? I just couldn't fathom why I needed to know what kind of oil they put in the power units. Do I need to know that? Is it that important?

Anyway, we went through that. I ended up spending additional time over the Christmas holidays going back and reviewing a lot of the notes from those lectures, because I began to put it into context and to understand, "Oh, you need that piece of equipment because it does this." I began to understand celestial navigation; how in the world do you know where you are in space and the measurement units and how those are all derived and the three-dimensionality of it. It took me a long time to figure that out. It was a brain exercise. It was interesting stuff. I knew that sooner or later it would all come together, and I'd understand how all that worked.

It was like a year of drinking through a fire hose, just lots and lots of stuff to understand. A lot of the people in the class, the military, the fighter pilots, this was all a different stage of their learning. It would have been like taking one of them and putting them in medical school. It would have been like, "Whoa! Do I have to know all this? What's important, what's not, and how does it all fit together?"

It was a great year. We all got to know each other. I got to know Hoot [Robert L. Gibson] real well. I enjoyed flying with him. The pilots had to take us along as backseaters. We had a syllabus. We had to fly like 15 hours a month, which was a lot. You figured out which pilots you liked to fly with, which ones you felt comfortable with, which ones were comfortable with you.

It would kill me to fly with somebody who mumbled, because I was stressed out anyway. What am I supposed to say to air traffic control, and they're rr rr rr. You're flying along for an hour and a half, and they don't want to talk. You look at the ceiling; you wait for some call. It's like okay. So you got to know which ones you were comfortable with, which ones you felt safe with. There were a couple of pilots who liked to do wild and crazy things, without warning you. Again, you narrowed down the people that you liked to fly with.

Hoot was excellent. He was a good instructor. He would tell me ahead of time, "We need to do this. Air traffic control is going to ask you this, and this is what they want you to say. Let's review the approach plate so you'll know the verbiage that they're going to use." Just was an excellent teacher, personable, and I enjoyed flying with him. So I did a lot of flying with him that first year and then the next couple years. That's how I got to know him.

Ross-Nazzal: When did you get your pilot's license? Did I see that in your biosheet that you ended up getting a license?

Seddon: Yes. I did an elective in the last year of medical school with a plastic surgeon, and just chitchatting over repairing somebody's face I said, "I've always wanted to take flying lessons."

He said, "Funny you should ask. I own a flying school. Come on out, we'll give you one ride, and you can meet some of the instructors, and see whether you like it or not. If you want to I'll give you a discount on some lessons."

I liked it. It was expensive, but I asked my dad if I could have ground school and I think the first 45 hours as a graduation present from medical school. He thought that's crazy. I figured maybe someday I'll get to be an astronaut and that will be important. But probably not, but I'm going to be a rich doctor someday, like this plastic surgeon, who had his own airplane and could get around. I thought that would be nifty.

So that's how I ended up. By the time I applied to NASA, I guess in the last six months of medical school, internship, and residency, I ended up with about 100 hours. Got my license, did some cross-country flights, had a really fun time being able to leave sick patients behind and go fly, which was nice.

I think it might have been important when I applied to NASA that I had done something other than hang out in the hospital. It was fun, but it was so totally different from jet flying. I guess I'd had a little bit of indoctrination. I can remember the first T-38 flight. The pilot said, "Okay, we're going to take off out of here. We're going to fly down over Galveston [Texas], out over the Gulf. We'll fly up to 50,000 feet. You can see the curvature of the Earth. Then we'll dive down at the Gulf, and we'll go past Mach 1. Then we'll come back, fly up over Houston, and see the big airport, which is our backup." I thought, "Okay, well that's going to be the rest of the day." It was an hour, and a lot in an hour. That flying, that kind of airplane, that kind of speed, just the whole environment of having an oxygen mask on and having to do a lot of communication and being up very high, was pretty different from flying a Cessna around. It was fun.

Ross-Nazzal: Tell us about the camaraderie of your class.

Seddon: We had a great time. We were a huge bolus of people coming through. I don't think they had ever taken that large a group before. They broke us up into red team and blue team, so there was a little competition there. We would do things red team versus blue team. We spent a lot of time in happy hours. We found which bars in the Clear Lake area were happy to have 50 people or so show up at happy hour. Some of them didn't like that so we had to go someplace they were happy to see us.

It gave us a chance just to chat and visit, get to know the spouses. In particular, I felt like they were an integral part of our group. Just very interesting people obviously, interesting men, very interesting women. I enjoyed getting to know a lot of those folks too. It was like in medical school. I got to know a lot of the nurses, they were part of the team, and they were other females that I knew would be good folks to have for advice. We went on all of these field trips, and it was very interesting to be a part of kind of a military organization, because the pilots were used to being part of a squadron and being off someplace, and everybody went drinking together. We didn't really have an awful lot of time for that in medical school and residency so I was not used to this party atmosphere that we had.

We'd do things like take canoe trips down the Guadalupe [River] and just ways to get to know each other. Just a wonderful group of people that were having fun together. I think that our class got pretty close over the course of the year. We'd take the field trips to NASA Centers and all have to get dressed up and go and look at large rooms full of computers and just a lot of shared experiences. We had a

good time. Everybody got to know each other pretty well. We knew that we would be assigned to crews with those people someday. We knew that we would be working with those people closely someday. It's like when I started medical school. I looked around, and I said, "These are people that are going to be important people in my life." It was fun to get to know everybody and hear all the joking and fun that everybody had.

Ross-Nazzal: Who were some of your first officemates in the office?

Seddon: Gosh. Who was I in the office with originally? I don't even remember. I remember that the women tried to do things together. My condo was right outside the back gate at NASA. Sally and Kathy would be going out for a run, and they'd drop by my house. We'd sit around and chat. Anna and I got to be close friends, because our backgrounds obviously were the same. I think we were probably most alike of the six of us. She wanted a family; I wanted a family. She was recently married. I got to know Bill [William F. Fisher] real well. Just the shared background and doing emergency medicine.

I'm trying to remember who I was in the office with and darned if I can remember. I remember who Hoot was in the office with. He was in the office with Ellison [S.] Onizuka. They were just crazy. Their office backed up to the ladies' room. There was a hole in the wall, it didn't really go through, but they had a sign underneath, "Free peeks." Hoot just kidded Ellison to death about liking fat women. Ellison's wife, Lorna Onizuka, was as trim and lovely as she could be, but Hoot would say, "Oh, Ellison, there goes a fat one." They'd look out their window. "Oh, Ellison, come over here."

Ellison wrote on the board one day, he had to go on an out-of-town trip, and he said, "I am out of town on a fact finding mission," and Hoot erased the C in fact. He was on a "fat finding mission."

They just would do all kinds of silly stuff to Ellison. I think I probably had different offices at different times with different people. I don't remember. We were just always out of the office interacting with other people. I don't even remember. Somebody along the line may tell you, "Oh yes Rhea was in the office with me," and you'll have to remind me.

Ross-Nazzal: I'll definitely tell you.

Seddon: We had a good time.

Ross-Nazzal: Tell us about the name. You called yourselves the Thirty-Five New Guys. Who decided to come up with that and the T-shirt design?

Seddon: I have no idea. It was interesting to me that the military have a way of organizing themselves. I guess if you're a POW [Prisoner of War] you're supposed to know how to get organized. At our first Monday morning meeting Rick [Frederick H.] Hauck stood up and said, "After the meeting breaks up if the 35 of us could get together." Okay. He stood up and he said, "If no one has any objections, I'll sort of be the leader of our class."

Us nonmilitary folks were going, "Who are you, to just take over like that?" Again we were not going to say anything for fear of looking stupid, but apparently in the military the guy with the highest rank takes over as the leader so we learned that later on. What was your question?

Ross-Nazzal: I was asking about the Thirty-Five New Guys and who came up with the shirt.

Seddon: Somehow and I don't even remember how it happened, we had to have a group name, or somebody felt like we ought to have a group name. I guess in the military it's the freaking new guy, the FNG is the new guy that's stupid and doesn't know anything. We got to be the TFNG. It was a play on the military term for dumb people, or new people anyway. That's how we got the name. We had our T-shirts, we had our mugs, and we had everything. We were the TFNGs. We referred to ourselves as the TFNGs. We referred to those other people as the old guys. They didn't like that, the old guys or the TFNGs.

Ross-Nazzal: One of the things—as I was looking over your biosheet—I didn't see it on there, but it was on some research that we had pulled. You had worked on the food system initially when you came. Were you working with Rita [M.] Rapp and some of the other people in that organization?

Seddon: That was my first technical assignment, and I was a little disappointed that I didn't get something more general. I think Sally was a CapCom [Capsule Communicator], Anna got suits, and I ended up with the cooks. I guess I could see that I'd done research in nutrition; I was interested in nutrition. I understood that. I really needed an assignment that would help me get up to speed on technical stuff. I took it with gusto and went and enjoyed working with Rita and all those people. Had a great time. They were just in the process of designing the food packages, flew in the zero-G plane testing out the food packages. Got to know how the galley interacted with the Shuttle, all the electrical power, and why they decided to design the system that way. I just went at it, and somebody said, "I think that was sexist the way they assigned you to that." I think the perception was, with the other people, that I must not be very bright. I got assigned to do that.

I didn't really care. I was used to, a lot of times, being assigned to follow something that wasn't the big deal, but if you prove yourself in doing whatever job you're given, better jobs come your way. Sometimes you just have to do the best you can, make lemonade if you're given lemons, and that's what I did. I learned a lot just digging into a lot of things that maybe weren't exactly food systems. There were electrical power, there were cooling systems, and there were radiation things. Basically, what kind of nutrition do we need to provide, and what do we know about human physiology and things like that. So I just tried to make the most that I could of it, and I got good assignments after that.

Ross-Nazzal: Did the menus change, or the food options change, once women came on board? It's a strange question, but I was curious. Were there things that the men really wanted that the women weren't too happy with?

Seddon: Not that I know of. I think the food changed because astronauts were willing to speak up about what was good, what was not good. I can remember doing a poll about what do you want to eat when you're in space. It went all the way from just give me sufficient calories in food bars, and I'll be happy; I'm not focused on food, just whatever will maintain my physiology while I'm there; to I think we should have steak, and I think it's stupid to not have a microwave. There were people that were very picky about it, and people that didn't really care about it. It taught me that we had to be able to select our own menus. (There previously had to be a standard menu.) I think that's the way Rita and Charles [T.] Bourland were moving. "We'll design a bunch of stuff and then people will have the ability to try things if they want to and tell us what they want to eat."

They were open about suggestions, "Why can't we take this, why can't we take that?" The bread, when we started out, was terrible. It was irradiated. It was dry. It was awful. "Why can't we take tortillas?" "Okay." "Why can't we take a loaf of fresh bread?" "Okay." It was like pushing the system but to very receptive people. We even asked for strange stuff, just because people liked that. They designed tea for Jeff Hoffman and me. We didn't drink coffee, and so Jeff and I said, "Isn't there a way that we can have hot tea up there? We don't want the instant. We want tea bag tea."

They said, "Sure, we'll just package tea bags in the drink containers."

We said, "Let us try that." Well, it was okay at first, but if you let it sit for ten minutes it was terrible. We said, "We need to have a way to brew the tea and then put it another container." They designed a way for us to do that.

Ross-Nazzal: How did they do that?

Seddon: The little square plastic containers. You put the water in with the tea bag, and you let it brew for however long you want. Then they made a double-ended straw that had two of the connectors that went into the container. We would just squeeze out the tea from the brewed cup into the new empty cup, and then discard the connector and the old tea bag box, and put a straw in our decanted tea, Jeff and I called it, our tea ceremony. The food system people were excited about flying in space the way we were. Their food flew in space, and they wanted us to be happy with that food.

A lot of people complained about the food but never tried the food. They just said it wasn't good when they got there. They'd find out that some people need a lot of spices in their food; they put hot sauce on everything. There were things that we didn't like but we didn't have to take those. I enjoyed working with the food folks the whole time I was at NASA.

When I made my flights where my nutrition was important, my last two flights, they wanted to be very good about making sure that we maintained our food intake and our vitamin and mineral intake. We had to measure everything. We worked really hard on, "What will I eat? What does it contain? I'm going to work hard to eat everything that I'm supposed to eat, because that's normal. All these tests being done on me won't be affected by the fact that I'm starving, that I ate too much sugar, or that I ate too much food." I worked with the food folks the whole time I was there and enjoyed it.

Ross-Nazzal: I think I've seen a recipe from you in Charles's cookbook [The Astronaut's Cookbook: Tales, Recipes, and More].

Seddon: In his cookbook, yes. I was one of the people he wrote, and that's a good recipe.

Ross-Nazzal: I haven't tried it yet.

Seddon: My aunt Alice, my grandfather's sister, that's her recipe.

Ross-Nazzal: Tell us about testing the food on the KC-135. What did that involve?

Seddon: That was interesting. I was pretty sure that I would be sick on that airplane. At the time what they were recommending was Scopolamine and Dexedrine for motion sickness. I took that and felt pretty well. Our job was to go up there, and in periods of weightlessness, open the food packages and eat the food or drink out of the containers, or just basically squeeze stuff out of whatever they came in and eat.

We proceeded to do that. The problem was that they were testing motion sickness with a spinning chair up there so here are these people in the front of the plane spinning around up and down, not feeling well at all, getting sick, coming and sitting in the back until they could get rid of everything they had inside of them. Here we were, spooning spaghetti with parmesan cheese out; there go the peanuts, globs of food, odors. It was like, "This was not a good mix of people to do this with." But there probably is never a good time to take smelly food in the KC, because invariably some people are sick.

It was fun to have the opportunity to fly in the KC. I had reason to make several flights. We'd finish doing whatever we needed to do, and we'd go play. We got a chance to see all the different things that were being flown on that plane. They were taking gerbils up to see what the gerbils would do in weightlessness. They were doing the motion sickness testing. They were doing all kinds of things.

So again as part of something that wasn't as technically exciting as spacesuits, I had the opportunity to see some things that I otherwise would not have gotten to see and have experiences that the other people didn't get to have.

Again, doing technical assessments of important equipment, we found that for instance when you put straws in the drink containers the fluid would crawl out of the straw just because of liquid forces. We had to figure out, "What are you going to do about that?" I said, "Well, I know from health care where they had to irrigate things, where they had to put large amounts of IV [Intravenous] fluid through the bladder or something like that, that there's a metal clip that you can operate one-handed, turn things on, turn things off. We need to put something like that on the straw." They went out and researched, and they said, "Is this it?"

I said, "No, that takes two hands. You need something that you can flip open and flip closed, and it looks like this."

They went, and they said, "Is this it?"

I said, "That's it. It comes from urology practice actually." They designed a little plastic one.

Again there were technical challenges in the food systems, just the way there were technical challenges in the remote manipulator or the spacesuits, just at a slightly different level. I had fun doing it.

Ross-Nazzal: Everybody has to eat on the Orbiter.

Seddon: Exactly. Everybody uses my little piece of equipment on their straws.

Ross-Nazzal: That's cool. Next time we see a picture we'll think about that. One of the other things I noticed on your biosheet that I thought was interesting is you were a launch and landing helicopter physician. Would you tell us about that?

Seddon: That was very interesting. Mr. Abbey, I think, decided that as many people as possible should be involved in some way in the first launch, bless his heart. He rolled the idea that the doctors in the office ought to be part of the search and rescue. I guess because of my emergency room work, and Anna was doing something else, he asked me to look into that.

Me, Anna, Norm [Norman E.] Thagard, and Jim Bagian were in the office at the time. When we looked at how many helicopters were going to be deployed both at the Cape [Canaveral, Florida], at Edwards [Air Force Base, California], and at Northrup Strip in New Mexico, I think they needed six docs. We had four in the office. Craig [L.] Fischer was head of medical operations at the time. One of the flight surgeons we involved. When Bill Fisher was selected in 1980, we got our sixth. We talked to the SAR [Search and Rescue] forces and yes, if they were told to do so, they would put us on the helicopters. And yes, they would appreciate our input because they didn't really know much about the Space Shuttle or about what the suits were that the astronauts would wear or how the escape systems worked, that sort of thing. They needed a liaison with our office so I mapped it all out for Mr. Abbey.

I said one of the problems is I have done trauma life support, but the other physicians that we're working with were not used to dealing much with trauma. I think Bill and Anna probably had. I guess that's what it was. It was Bill, Anna, me, Norm, Jim, and Craig Fischer. That was six of us. Jim, Norm, and Craig had not had any trauma experience, and Bill, Anna, and I were a few years away from the

experience we had. I asked if we could do some additional trauma training. There was a good course in San Diego [California], and then there's an advanced trauma life support course. I said, "If you want us to do this, we want to be capable of doing it."

He let us do some additional training, which all of us enjoyed getting back into medicine. Craig was a pathologist, so he was interested in "How do I handle emergencies," because pathologists don't have an awful lot of emergencies. We did some additional training. But then we began working. We were each assigned to a different launch site for the first flight and began to work with the crews that were going to man those sites and learn about search and rescue. I didn't know anything about helicopters, about SAR forces, about PJs, the parajumpers that jump in the water with people. It was fascinating because the helicopter crew that I worked with out at the Cape had been doing search and rescue for years down at Homestead Air Force Base. They had all fought in Vietnam; they were the crazy people that went into the jungle and pulled people out in Vietnam, handled helicopters that were under fire. Getting to know those people and getting to hear what they had done, they were just awesome folks.

I was assigned a PJ named John Smith, who had absolutely no hair. Big burly guy, and just one of the nicest people around. To look at them you would think they were animals of some sort. The things that they did were just physically awesome. Just very very nice people. I got some time flying a helicopter, and just had a great time being a part of that, learning the on-scene rescue, evaluation, and treatment of patients.

I was used to working in an emergency room, where patients all came in with their IVs and their tubes down their throat, their limbs bandaged and splinted, and laid on a table. Now I had to deal with what do we do if we get out there and they drag an astronaut in a pressure suit out of a Space Shuttle. At first, John deferred to me. He was like, "You do your stuff and tell me what you need." I came to realize that he was much better at doing the initial evaluation and treatment because that's what he had been doing for years. He was in charge at first, and then I was going to take over on the things that I knew how to do. I could do the follow-up part. We worked really well as a team, and I learned a lot of stuff. I got to see the first launch from the skid strip at the Cape and watched it with those guys. It was a really nice experience.

When I first got into it I thought, "This is crazy," but it certainly got us very involved in what was going on. I think we added value because we could say, "If we get people in this condition we need to take them to this facility. Here's what we're going to have to do if we have to take somebody's helmet off; here's how we would do this, and here's how we would do that. Here's what the Shuttle can do, here's what all these words meant" so that the rescue forces understood what was going on. We had a number of practices. I think we all learned a lot. Luckily we didn't have to use that, but we were prepared.

The second flight I was at White Sands [Northrup Strip, New Mexico], and they didn't land at White Sands. Then for the third flight I was eight and a half months pregnant, so I deferred on that one. I let one of the flight surgeons take my spot at Edwards for that one and stayed home.

Ross-Nazzal: Did you help write the checklist? If they did bring an astronaut out, "This is what you'll do."

Seddon: I think we must have done that, but I don't remember that there was a checklist per se. I did have the opportunity, as one of my assignments, to help with the development of the medical checklist that flew and the equipment that was carried in the medical kits. We certainly developed what we were going to do and probably somebody wrote it down as a checklist and put down, "Here's what you need to do to get people out of the Shuttle." They had a variety of ways. You could take them out the overhead windows; you could take them out the side hatch. You could saw a hole in the side. There were all kinds of permutations and combinations of how it could happen, and I'm sure they documented all of that. I wasn't in charge of writing the checklist per se.

The PJs had to wear the SCAPE [Self-Contained Atmosphere Protective Ensemble] suits, the big aluminum suits, because of leaking fumes and stuff like that. I thought they were going to kill themselves in Florida, trying to climb up on the Shuttle model and hoisting people out on a backboard through the overhead windows. John would get back to the helicopter after they'd carried them, and he would just be drenched with sweat. I thought, "They're going to kill themselves just with the rescue part. I'm going to have to rescue the rescuers." It was amazing what they could do and what I learned from them.

Ross-Nazzal: What a great assignment actually.

Seddon: Yes. It was.

Ross-Nazzal: You mentioned you did work with medical ops. So tell us about the Orbiter medical kit and writing those checklists. What was included?

Seddon: I think I added to, although I can't claim that I wrote those or designed the kits. I was assigned to follow that and see what was added, and I think I made some additions and talked to folks about the training. On every flight they train two people to be medical officers, and they may not have had any medical training. I would attend the training and see what was unclear and what we needed to clarify. I know what an otoscope is, but if you said, "Pull out the otoscope," they [the non-physicians] would not know what that was. It's the thing you look in people's ears with. We had to change a lot of the terminology.

I know how to describe locations on the human body. I'd say, "He's got pain in the left upper quadrant of his abdomen," and another doctor would understand that. If you're an engineer and an astrophysicist you may not understand that so they put a drawing with a grid in the medical kit so you could say he hurts at B-14. Some things like that. The medications that were carried, we did occasional upgrades of those. The flight surgeons would say "This is probably a better drug; what do you think?" We developed a CPR [Cardiopulmonary Resuscitation] capability. That was a question: how do you do CPR in weightlessness. So that was another thing, that I got to fly in the KC-135 and worked out how do you secure the rescuer, how do you secure the person who's down, how do you use different muscles to do the chest compressions. I enjoyed working on that.

It was another one of those assignments that my background added value. There were a lot of assignments where I was assigned and didn't know anything and basically the job added value to me. We were fortunate to be given assignments that did both. I think that was good. You had the ability if there was something that you wanted to work on, something that you found really interesting, a lot of times you would say, "I want to go work on this" and they'd say, "Okay, your next assignment will be that," or "Add that to your list of assignments," which was frequently what happened. So you got to work on things that you were interested in and that you could help with, or that you could learn from if you knew nothing about that at all. You had to be brave enough to say, "I don't know anything about that; I need to work on that for a while."

Ross-Nazzal: You mentioned something that no one has ever told us before, that there were always two people trained to be medical officers. Would you tell us about that? Did you ever train any of these folks in the office?

Seddon: My husband was a medical officer on all his five flights. It was fun to hear him at the dinner table. "Why do they do this? Why do they have that? Why'd they make it this way? What's this

anyway?”

I did participate in a lot of that training. Usually the people who volunteered to be the medical officers had interest in that, and they wanted to know: how do you give an injection, how do you start an IV. They self-selected, but they came from a knowledge base of nothing. They knew how to put on a Band-Aid and that was about it. The training had to be like water survival training. You start with very simple stuff, and you work your way up. Obviously they always had ground backup. Most of the time whatever happened, they could talk to somebody, and we could get home fairly quickly. It wasn't that they had to do appendectomies or brain surgery. We had a history of not really having to deal with any medical problems.

So it was fairly basic, and the kit itself was fairly basic. There were a couple things that if you didn't use them right you could hurt somebody. We had to do some training on those things. There were certain medications that you could take at will, over-the-counter stuff. Other things you're supposed to ask the flight surgeon. We had to make sure that there could be private medical conferences, that the press wasn't going to bug anybody about if somebody felt the need to take certain medications. We did a lot of dealing with space motion sickness early on trying to figure out how to get people through being sick. What were the things they could try, how sick were they, and what did they have to do that we needed to replan for?

The people we trained—or that were trained, I can't say that I did the training, the flight surgeons did that—were smart people, and usually interested people, and again had fun with it. Different ones got into it in different depths. Have you interviewed Dave [David C.] Hilmers?

Ross-Nazzal: No, he's on the list actually, he's agreed.

Seddon: He's amazing. From the very beginning, I think he came in with the '80 group. He wanted to be a doctor; he'd always wanted to be a doctor. He can tell you his history, but it was like he never got a chance to be a doctor. He would come and ask me medical questions, and I'm thinking, “This is a military backseater. Why is he asking me?” His questions were naive. He decided he was going to take an ACLS course, which is Advanced Cardiac Life Support, which is a very advanced course even for residents to take. He came up with these bizarre questions. He had this totally wrong view of what they were talking about, something like, “Using the laryngoscope visualize the vocal cords.” He said, “I can't figure this out.”

I said, “What don't you understand?”

He says, “I know what a laryngoscope is, but I'm supposed to visualize something,” which to him meant think really hard about it and picture it in your mind. What it was was you use the laryngoscope to stick down somebody's throat so you can see, visualize, the vocal cords. He was wonderful because he was so much fun. I know he had a lot of fun with the medical training, because it was something he wanted to know more about. When he left NASA, he went to medical school. There were folks like that that just really really got into it, and folks like my husband that was like, “Yes, I can take care of the simple stuff, and don't ask me to do anything really hard.” We were pretty sure people weren't going to get real sick on the Space Shuttle, so it wasn't this terrible urgency of having to save lives.

Ross-Nazzal: You continued to work on the side. You were still working in hospitals.

Seddon: I did. I started out to do that. I had done moonlighting as a resident in emergency rooms. At the time hospitals had part-time people that came in and worked in the emergency rooms. Although it was becoming a specialty, really there were only very large hospitals that had full-time emergency room physicians.

Again, I could just barely afford my condo on my government salary. I felt like, “What if NASA decides after a year that I'm not astronaut material, or there's something that comes along that they ask me to do that I can't do for one reason or another, or I'm not good enough for what they want. I'll need to go back into health care and so I probably ought to keep my hand in.”

I looked around to do some form of part-time surgery. There really wasn't any way to do that. The folks in Galveston [Texas] and in Houston [Texas], some surgeons, said, “Come down, you can wait around for my cases on the weekend. You can scrub in.” It was basically being an assistant hanging around doing nothing all day. It just wasn't very fulfilling.

I signed up with a scheduling company to do emergency room work and did different hospitals all over the Houston area. I didn't really like going to different hospitals all the time. Some of them not particularly safe hospitals, bad neighborhoods.

At a medical conference, I met a fellow woman physician who was part of a two-person group that covered a community hospital ED, and they were looking for extra help. So I signed on with their group. I did a couple of shifts a month just to keep my hand in. I made a lot more money at that than I did at NASA so that was nice, the additional income. More than anything, it helped me keep my hand in in medicine, to know what was going on in health care, so I didn't get completely distant from it. I ended up doing it the whole time I was there.

Ross-Nazzal: Was it difficult to balance your career at NASA, family, and then a part-time job?

Seddon: Absolutely, but I couldn't quite figure out what I was going to give up, obviously not my NASA career or my family. There were times when I felt like I would really like to have a whole weekend off or another Sunday off and not have to do that. I began to worry about whether or not I could handle some of the things that I might see in an emergency room. I worried a lot before I did a shift. I worried a lot after I finished a shift; did I make the right decisions on those patients? I was getting further and further from my training, and I'd never trained in emergency medicine. It was stressful. I was always afraid I was going to hurt somebody. Never did, so it was okay. But yes, it was just another one of those things. I guess if you've done a surgery residency, everything after that is easy. So even though there were additional hours of work every week, it didn't compare with how busy I had been the previous four years so I continued to do it.

Ross-Nazzal: That's interesting that you say that, because Anna Fisher said the same thing. When she got to NASA it was just great, because it was pretty much 8:00 to 5:00. Obviously you guys work a lot longer hours, but she said it was just fantastic.

Seddon: You took weekends off, government holidays, and plenty of vacation, and you could sleep in your bed at night. So yes, as I said, as a resident you just got used to incredibly lengthy hours, and they didn't think anything at all about work all day, work all night, work all day the next day. I guess you get used to that. Then it was so nice to work a 40- or 50-hour week and have a weekend off. I guess I filled some of it up with additional work.

Ross-Nazzal: Do you continue to practice medicine?

Seddon: No. When I left NASA, as I said, I was beginning to feel far away from my training. I wanted to work at Vanderbilt [University, Nashville, Tennessee], and I think their standards are pretty high for their physicians. You have to be board-certified in a specialty to work there, and I was not board-certified in

emergency medicine. I was way far from surgery and was not board-certified in surgery either. They offered me an administrative position, and I took that, involving patient care.

Ross-Nazzal: You also worked in the SAIL [Shuttle Avionics and Integration Laboratory]. Tell us about that.

Seddon: That was one of those jobs that I knew absolutely nothing about so I had to just jump in and figure it out. That was testing the software for the Shuttle, basically. Do the computers talk to all of the black boxes out there that are running everything? I had to work really hard to understand what was going on, but it was absolutely essential that I do that. If you were acting as the commander, the CDR, in SAIL, you had to flip certain switches and do certain things. You could probably have done those without having much depth of knowledge, but it really really helped if you understood what was happening and you could understand when it didn't work quite right. "Am I sure I flipped the right switches, or is there a glitch in the software, or the black box is not responding properly." Can you notice that, can you help feed into "I did this, and this is what it looked like in the cockpit," so somebody could trace down where the problem was.

That was a very valuable experience for me, and it taught me a great great deal about how all those facts that I had learned in the lectures would come together and how it really worked. Just like you plug in your lamp at home, and you don't really understand how the electricity got to your house or how it gets into the lamp or how the lamp makes light. Suddenly for SAIL it was like, "Oh, there's a wire that goes from this box that sits here out to the rudder, and oh yes, it doesn't really run the rudder, it runs the power unit that runs the hydraulics that runs the"—so to me it was getting much more in depth about understanding how all of that worked together and what all the pieces of equipment were. It was very very valuable to me.

I think I married Hoot somewhere in that timeframe. Probably went to SAIL after the first launch and was working in SAIL when I married and got pregnant. Hoot was working in SAIL too. Because when I found out I was pregnant, I went to SAIL and pulled him aside and said, "Guess what?" SAIL was important and memorable in many different ways. Hoot was really invaluable to me at that time when I came up with all these questions about, "How does that work? Show me the diagram about how this thing runs. What does this thing really do, what's it looking at, and how come it does that?"

He just engineeringwise understood all that, the way I understood medicine stuff so we could help each other understand the different parts of our job.

Ross-Nazzal: Balanced each other out.

Seddon: Yes. It was good.

Ross-Nazzal: What were your hours like at SAIL?

Seddon: A little bit crazy. SAIL ran around the clock most of the time, doing the testing. Sometimes you worked night shift, sometimes day shift. At the time I didn't have kids, didn't make any difference whether I worked 7:00 to 3:00 or 3:00 to 11:00 or 11:00 to 7:00. Just tell me what I need to do, and I'll plan the rest of my life around the job assignment. It was probably a good time to have that job assignment.

Ross-Nazzal: Were there any other astronauts working in SAIL with you?

Seddon: Yes, there was a whole group of us assigned to SAIL. Hoot was one. I don't remember who the others were. Seems like Mike Mullane in his book talks about me being very pregnant and flying the Shuttle in SAIL. I guess he was over there at the same time. I don't remember all the people, because we for the most part kind of worked alone. A very complex system, and a great way to get to know both the software and the hardware.

Ross-Nazzal: So they let the MSs [Mission Specialists] fly the Shuttle in SAIL?

Seddon: Oh yes. Just fly where the needles tell you to go and you can pretend like you're flying down. That wasn't part of what they were testing, obviously. They were just looking at the systems that supported it, but it gave you the opportunity to pretend to be the commander of the Shuttle.

Ross-Nazzal: That's cool. You also mentioned in your biosheet that you worked on Orbiter and payload software. Was that different from working in the SAIL? Or was that the same?

Seddon: That's interesting, because actually I was given this crazy assignment, maybe even before SAIL, of verifying the displays that were used for the Shuttle. In other words, the computer displays that came up. If you put this item in, does it do what you expect, and if you mistakenly put in these two items together, does it do anything funny. Somebody else was doing that job, and I got assigned to help them. Then they went away and I was put in charge of that. I knew very very little about it, but in order to test that, you had to do it in the simulator. I told the fellow who was in charge, my boss, I said, "I'm happy to do that, but somebody has to give me the simulator time to get in and make those inputs." Item one, item two, execute, item three, execute, and we couldn't use SAIL for it.

The motion base simulator was the only thing we could use, which was very expensive to run, but they found some time for me to do that. I had to learn how to put together test plans. Luckily, the pilots, especially Dick [Richard O.] Covey, were very good at helping me. They had been test pilots, so they knew how to put together a test plan. Showing me how to put that together, identifying what should happen, verifying that it did happen. Then I would invite them over when we did the simulator runs, and they enjoyed getting the simulator time and being able to look at all those displays, and even fly the thing some of the time, because some of the time you had to put an item entry in and do something strange and see whether or not they interfered with one another. That's how I got involved in Orbiter software. Again, starting from nothing and having to figure out all of the displays that people could see.

Payload software, I'm trying to remember what I helped with in payload software. It probably was during the time that I worked as a support crew for STS-6. After SAIL and before Paul was born. So it would have been early '82. I was assigned to be support crew for the sixth Shuttle flight. Mike Mullane was already doing that. Their big payload was the Tracking and Data Relay Satellite, but they had a number of small payloads. I was assigned to work on those additional payloads and also to help Mike on the flight itself.

They didn't have backup crews anymore. They assigned people as support crews, again both to be a help, kind of a gofer, for the prime crew, but also as a way to learn what's the training like for a crew. What do they do? You follow them around, do whatever they asked you to do, tracked down whatever they needed to know. Got to go along with them on some of their visits to places.

It was another on-the-job training type thing. That's probably where I was involved in some of the payload software, the software that supported the things that they were carrying as payload.

Ross-Nazzal: Did you travel to the Cape a lot as a member of the support crew?

Seddon: We may have, but I don't remember specifics. I had a baby in the middle of all that. I had to take a little time off and then was kind of tied to home for a little while after that. I mostly did the things in Houston. Mike probably went to contractor facilities and things like that. I may have made some trips, but I don't remember specific ones. Bo [Karol J.] Bobko was the pilot on that flight. [Paul J. Weitz] was the commander. They were good folks to work with. Story Musgrave worked on some of the secondary payloads and Don [Donald H.] Peterson. They just were a lot of fun. We had a good time working together.

Ross-Nazzal: You also worked on something called crew equipment. I wasn't sure what that was.

Seddon: The crew equipment person is the person who knows about and helps the development of any kind of crew equipment, anything from clothing to the galley to the potty to any kind of other stuff that's stowed for the crew. If the crew says, "We need to have a special pair of gloves to be able to handle this experiment," the crew equipment person works with—there's a whole division of people at NASA that work crew equipment. You're the liaison to that group that says, "Okay, this is what the crew needs. Tell us your options. Let's work on that." You're the first contact on that. You could say, "Okay, let's show these to the crew. Now that they've decided this is the equipment that they want, we need to figure out where we're going to stow them, how they're going to use them, what do they need to know about failure modes of this piece of equipment." You just take care of whatever stuff that's not a payload that's stowed for the crew.

Ross-Nazzal: You also worked as the technical assistant to the director of FCOD [Flight Crew Operations Directorate]. When did you do that?

Seddon: I was the Bubba. Have you heard that term?

Ross-Nazzal: I have.

Seddon: The Bubba job, when Mr. Abbey was head of Flight Crew Operations was basically his pilot. But you also got to sit on the eighth floor and see how Flight Crew Operations was run. You did whatever Mr. Abbey asked you to do, but you were there as a pilot to take him where he needed to go. Then when Mr. [Donald R.] Puddy became head of FCOD, he never managed to get checked out in the T-38, so he didn't really need a pilot. The Bubba didn't necessarily have to be a pilot, but it was just tradition that the Bubba was a pilot and understood the pilot stuff. Mr. Puddy needed somebody who understood the pilot stuff, because he was not a pilot.

After the Challenger accident [STS 51-L] was all taken care of, I asked in 1988, I guess, if I could get some management experience. The best way I figured I could do that was to go work for Carolyn Huntoon, who was head of Space and Life Sciences.

I went and talked to her, and she was okay with that. It was free help, and I could probably learn some stuff. I went and asked, I think it was Dan [Daniel C.] Brandenstein at the time who was chief of the office, if I could get some management experience by working in Space and Life Sciences as Carolyn's assistant. He said, "Hm, let us think about that." He came back to me and he said, "Why don't you go be the Bubba?" I think Steve [Steven A.] Hawley, a Mission Specialist, had been the Bubba. There had been very few nonpilot Bubbas, but there'd never been a female Bubba.

It was like, "Wow! I hadn't even thought of that as an option." He said, "Yes, why don't you plan on doing that." So I got to go be the Bubba. I had a good time and ended up being very pregnant during that job. Not only was I the first female Bubba, but I was a very pregnant Bubba.

I couldn't fill the piloting role; I couldn't fly anybody anywhere. When a pilot question came up I had to go talk to somebody and get the answer. I couldn't necessarily come up with the answer right away, but I could do that. I think I was handling some of the issues that the crew office had with Life Sciences, because I understood that part of it. I knew the people over there. I learned a lot of stuff. I was given jobs to do. I figured out how management worked. I figured out how to delegate responsibilities. I could call on the phone and say, "Mr. Puddy wants you to do this," and how to send work out to get done, follow when it came back, and filter it. That was a very good experience for me. It was that sort of management experience that I wanted to get.

Ross-Nazzal: I just thought it was interesting. I wasn't sure if you were working there with Mr. Abbey or not.

Seddon: No, I never ended up in there with Mr. Abbey, that would have been interesting.

Ross-Nazzal: I think this will probably relate to your later flights, but I thought I would ask because you were initially assigned when you came in in '78 to Spacelab-3 and 4. Do you want to talk about your efforts prior to the flight?

Seddon: I was not assigned to it. I simply was interested in it, and that's another one of those things where if you express some interest they'll let you work on it. Joe Kerwin was working on that, and I got to know Joe, because I'd met him during the interview process. He was the first doctor in space. He was kind enough to share a lot of information with me about Skylab. I flew with him; we would chat on the way from here to there. I don't know whether I asked him, or he asked me if I wanted to go. Initially they were talking to science groups about applying to fly experiments on what was then SL-4.

I got to meet a lot of the scientists who had done space experiments before, were interested in responding to the NRA (NASA Research Announcement) that came out I think in 1980 or '81 and applying to fly an experiment. Joe and I went out and talked about what capabilities the Shuttle had, what things were of interest to NASA. I mostly listened, but got involved in the Space and Life Sciences community, and was very grateful to him for mentoring me along the way and answering questions I had.

That's how I got involved and met a number of the people that were eventually selected to fly experiments on that flight. Then I think at some point in time, Joe left the office. Periodically, I was asked to go and cover a meeting or talk to people who were beginning to put that flight together. After the experiments were selected and they were trying to blend them into a flight, I was asked to follow up on that. In the meantime I had other jobs, and I was assigned to my first mission, and I didn't have an awful lot of time to do that. It was something that I was interested in and I followed over the course of time, from the time I got to NASA I guess.

Ross-Nazzal: You had mentioned Joe Kerwin, and then you had worked with Anna Fisher. Did you work with a number of the physicians in the office?

Seddon: Gosh. Yes, but we were never assigned to the same thing at the same time. I got to know Bill [William E.] Thornton. He was a most interesting person. When he was getting ready for his Spacelab mission, talking to him, looking at what he was doing, and what they had on that flight, that was a good learning experience for me. Our paths would cross peripherally at times. We were never assigned to do exactly the same thing at the same time, but all of us worked on various aspects of that to a differing degree.

There were a number, over the years, of physician astronauts who really preferred not to work on the health care part, the medicine and life sciences part. They got involved in other things that were of

interest to them, the spacesuits, or other things that they became specialists at. It all depended on whether you were interested in working on that, whether you got assigned to work on stuff like that. A lot of times we would cover things sequentially. I might be assigned to cover or liaison with medical ops. Then I'd hand it off to somebody else, and I just needed to bring them up to date. They would check back with me on where does this stand and what was the decision. Other than the search and rescue, which we didn't really do all together as a group all the time, we weren't really a group that worked together.

Ross-Nazzal: I thought we'd shift gears and talk about women in the astronaut corps. I had a number of questions. You had talked about what you thought the older astronauts had thought of you coming in. What did the engineers and scientists at JSC and some of the other Centers think about this new class that included women?

Seddon: I don't know. I think we were a little bit of an oddity. I can remember going to some of those initial meetings with Fred Haise and being the only woman in the room. There would be a conference room with 25 people in it, and I was the only woman in the room. It was like, "Hm, that's one of the women astronauts." I don't think we were ever put down or anything like that or treated unfairly or differently. I think we were accepted into the group. I don't know how they felt internally, but we were all there working on great projects and exciting things were happening. It was like the more the merrier. A number of them were very helpful in teaching me things and explaining things to me. I always felt like if there was something I needed to know I'd set up a meeting with somebody and go talk to them about that.

There weren't very many women engineers at the time either so we were kind of the vanguard. Again I think once you proved that you were serious about doing the work, that you had some sense about you, that you wanted to be helpful, you were part of the team after that.

Ross-Nazzal: I think Sally mentioned she thought you had doubled the number of professional women at the Center when you came in. Is that correct? Do you think?

Seddon: Probably so. Again, it was very definitely a man's world. There were just not an awful lot of women in technology and science at the time. Carolyn Huntoon had a number in Life Sciences. I think there were probably more women in that division than in any of the Engineering or flying divisions. But yes, we were kind of the only women around.

Ross-Nazzal: How close were you as a group, the six of you? I noticed, for instance, you had [framed] all the photos, the signatures, and the patches [of the first six women].

Seddon: I think we were not a little women's group that got together a lot and did things together. We were too busy off doing different things. I think Sally was good about—when she was assigned to the first mission—involving all of us in some of the decisions rather than just making some of the decisions that had to be made by herself. She'd get us together as a group and say, "Where do we want to go with this," and "How can we answer this question?" She was good about involving us in that.

I think we enjoyed each other's company. People have asked whether we were highly competitive, and I never felt that way. We all had different backgrounds. We all had different specializations. We were all working on different jobs so there really wasn't any way to compete, other than do a good job at whatever you're assigned to do. I think we all sought to do that. That was the only way that we could stand out from the others, was to do a really super job on whatever you were supposed to be doing.

I think we were all fairly different. I often wondered whether NASA did that on purpose. Except for Anna and me, we came from different specialties. If you interview us, we're just different people. We were not all similar, so that we all enjoyed going shopping together, or we all enjoyed going camping together. We were at different places in our lives obviously. Shannon already had children, and Anna was married but didn't have children. I got pregnant shortly after I married, so sort of like this pregnant person wandering around.

We were just pretty different in a lot of different ways, but we had a good time together. Carolyn would frequently get us together, if there were issues that came up, or things that were said that were unpleasant that we needed to get together and laugh about instead of getting upset about. Carolyn was the mentor that we needed that could bring us all together and communicate. We decided to do something nice for Carolyn, and we put together a montage of pictures, the six of us, and signed it. We thought, "Why should we just do one? Let's do one for each of us," so we did that and that's the picture you saw. Carolyn was the impetus for pulling that together and was the impetus for a lot of us getting together, talking about things, and trying to handle things gracefully. So that was a big help.

Ross-Nazzal: Well, you did mention Carolyn Huntoon, and everyone we've talked to, Sally and Kathy both, and Anna as well, talked about just really how important she was as you came in. I think Sally said, "She made our lives much much easier." I was curious if you could comment on that.

Seddon: Sure, because we could ask the men about the technical things, but there just weren't any women that we could ask about navigating that organization and what was going to be important for our success and how to handle different issues, some of them difficult, some of them we just needed to decide what we wanted to do about that.

She'd obviously worked her way up in the organization and could tell us the history of why are certain things certain ways, and how to interact with this person or that person, how do we get things done without making a big deal out of things. She was very helpful to us obviously along the way.

For Sally, being the first woman, she just faced a lot of things that the rest of us didn't, and I think Carolyn was really good support for her. I think she and Carolyn got to be pretty close through that experience. Because Sally, this was sort of thrust upon her, and she just wanted to do a good job, I think, and yet there was all this peripheral stuff that she had to deal with that I don't think she really enjoyed doing. I think Carolyn ran interference for her, or told her, "Sorry, you need to do that one." I don't know that from the perspective that Sally has. I think Carolyn took us out to dinner when we came through on interviews; I think that's when I first met Carolyn, because we were talking to her about some things.

Then all the way through our experiences while she was there in Houston she was available to us to talk to and to get good advice from.

Ross-Nazzal: Kathy had told us this interesting story about coming down and being introduced at JSC, and that she had taken the six of you aside and suggested that you might want to come up with an approach as to how you would deal with the media. I was curious if you had any recollections of that event, about how much private information you might share.

Seddon: I don't remember that specifically, but I know that there was wide variation in comfort level with the press. There were some people in our group who took offense, "Get out of my face, paparazzi. You've taken my words out of context, and I'm upset about this article that says I said this and I didn't." Then there were other people who were, "Whatever" or "Hey, that's part of the job, I've got to do that, not going to be upset if I get misquoted." There was a wide range of that. Kathy may remember something different but I don't know that we ever did or could have come up with a group consensus about "Here's what we'll do and here's what we want," because different people were comfortable with

sharing different stuff. Some people didn't want to talk to the press at all, and other people were like "Here's my life. I'm here, if I can serve as a good example to other people, fine."

I think we all handled it in whatever way we were comfortable with and sometimes at different times and for different reasons. For instance I've always been reasonably comfortable talking to the press, but after the Challenger, I didn't want to talk to anybody about anything. There were a number of times at NASA, and since, where I was asked to comment, and I just wasn't comfortable doing that because of the situation or how I felt about things or what had happened.

Ross-Nazzal: You had mentioned Carolyn would call you guys together to discuss issues, maybe some difficult issues. Can you share some of those with us?

Seddon: For instance, there was a highly placed NASA official who was asked after, I believe, Sally and Judy's flight why of all the people unassigned to flights were four of them women. He said, "They keep getting pregnant." And yes, Anna and I had been pregnant along the way. The other two women I don't believe had. I don't remember exactly how all of that happened. It was a comment that we thought was inappropriate, hurtful. I think for some of us it was like a view into the head of somebody who had some control over our lives, and we didn't like what we saw, because of what came out of his mouth. We needed to come to a consensus about that, and Carolyn was very helpful about saying, "Okay, what do we want to do? What do you all want to do?"

I think the issue resolved itself. He came and personally apologized. He said it was an off-the-cuff remark, inappropriate, sorry. He assured us we would all have a flight soon. We did. It was things like that that we didn't want to answer individually, because we might have all had different opinions, different approaches, or different answers that we wanted back. It was good that we had someone. Carolyn served as kind of the leader of that group, so that none of the six of us felt like we had to say, "I'm the ranking officer here; I'm going to take over." Carolyn served that role. It saved us from having to be unequal among equals.

Ross-Nazzal: You mentioned that Sally was really good at trying to build a consensus when she was working on certain key issues. Can you give us some examples?

Seddon: I can give you a silly one. What did the women want in the way of makeup on the Shuttle? A girl issue, kind of. Having met a number of us, you can figure that there was a wide variance in what we wanted. I think we came up with "Give us the options," like the food system. "Here are things that have been qualified for flight. You can take of these what you want. We'll pack them all in a neat little bag and you can use whatever you want." Silly things like that, and they came up all the time. What kind of underwear do you want to wear? What about feminine hygiene products, where we would come up with an answer that was acceptable to the group.

[Break in audio]

Ross-Nazzal: We were talking about building a consensus, and you were talking about the makeup and the feminine hygiene, and some of the other issues that you came to a general consensus about.

Seddon: As different ones of us flew, and different issues came up, either we'd get together or we'd go around and talk to each other. "Is there anything I should think about when I'm considering this, that, or the other?" It just began to take care of itself. I think as we got more women engineers, and we felt comfortable making decisions for the group, it became a nonproblem. After all of us got to fly, I don't remember there ever being big issues that we had to deal with.

Ross-Nazzal: Was that makeup kit off-the-shelf? Or was that something Crew Systems put together and made?

Seddon: Crew Systems put that together, crew equipment people. They probably got somebody that went to the makeup counter. We gave them options of this brand, this brand, this brand. They went, and they looked at the ingredients and everything, because they were concerned about offgassing and stuff not passing. It has to pass what they call "shake and bake." They have to run the temperature up and make sure that it doesn't make a mess or melt. It was more than just picking something. Would it meet all the qualifications that you have to pass to be on board the Shuttle? We told them that and gave them, "These are the things we use; we want a moisturizer, and lipstick, and a blush."

My take on it was I wear some makeup, and I knew that in flight there were going to be pictures made that followed me all the days of my life. I'm pale, and yes I want some makeup on board. Others have never worn makeup, don't know what makeup is, could care less about makeup, would look different if they had makeup on, and I'm sure they didn't care anything about it.

But they realized that that was a personal choice issue so the crew equipment people went out and bought stuff that met standards and said, "Which of these?" We picked out this one, this one, this one, this one, and this one. They put it in a kit, put it on board.

I think it was like if women fly, unless they tell us not to stow the kit, we just put the kit on board. It's a chunk of crew equipment. It's not pick out your shade of lipstick.

Ross-Nazzal: So you just got what you got.

Seddon: Yes, you got the makeup kit, or you didn't get the makeup kit, which was okay with most of us; it wasn't a big deal. If they'd said, "We can't flight-certify any of this makeup, I would have said "Fine. It's a camping trip, I'll do without it. I'll pinch my cheeks whenever they take a picture."

Ross-Nazzal: Did you get the sense that they had asked their wives about any of these issues as you guys came on board?

Seddon: I'm sure they did. I think that was something I worried about, because I think we were a little bit younger than most of the people when we got to NASA. I worried that men would go home and ask their wives, and their wives were of a different generation.

Ross-Nazzal: Oh, that's a good point.

Seddon: About a lot of different things. That they might get answers that were not really how a younger generation felt, especially when I got pregnant. I was afraid that NASA leaders would go home to their wives and say, "Do you think these women can work when they're pregnant?" Their wives perhaps were told when they were pregnant that they shouldn't be on their feet, and that they would say, "They're not going to be able to work much past their fifth month of pregnancy. You shouldn't assign them to anything important."

I worried a little bit about that generational difference, and the fact that we really were blazing a trail in defining what we could do in this world, what we were willing to do, and what we wanted to do. So to a certain extent I think the men were not getting the most up-to-date information from our perspective from talking to their wives, and I don't know whether the other women worried about that. Being the first one that was pregnant, I worried about that, that they had some misconceptions about what happened

to women once got pregnant and had babies. I didn't want them to make assumptions about me that weren't true.

Ross-Nazzal: Let's talk about it, since you did bring it up. I noticed in the news releases that you announced that you were going to be having a child. Was it ever any issue for you? I know that Anna Fisher for instance said that she kept the pregnancy quiet for some time, because she was worried about the impact it might have on her career.

Seddon: Yes. I kept mine a secret until after I'd had the amniocentesis and knew that it was a healthy pregnancy. I needed to know whether or not I could plan to continue to work. So no, we didn't tell up till about halfway through the pregnancy.

I had some concerns about what impact it would have, but I had to make the decision whether or not when we married I wanted to postpone having children until after I flew, or whether it was more important to me to have kids. I made the decision that I wanted to have kids. I would have been okay if I had gotten to be the age that I am now and only had one flight but I had my family, than if I'd said, "Well I waited, and I got some great flights, but I waited too long to have children." So we decided to go ahead and try right away.

I don't know what impact it had, but it didn't make any difference to me what impact it had. I wanted to be able to continue to do the things that I wanted to do. I didn't want somebody to assume that, "Oh, well, when she has the baby she's never going to be back," or "While she's pregnant she can't do certain things." Maybe it was not appropriate, but we told John Young, we told George Abbey, and then because Dr. [Christopher C.] Kraft was a friend, and had followed our careers, we went and told him, because it was a first in the space program, and we didn't want him to get blindsided and not have an answer if somebody said, "Have you heard?"

They congratulated us. "Fine. That's nice. I understand you want to continue with your career. Fine." Then about the time I got back to my office after talking to them, I got grounded from the T-38s and without real good reason. I was a little upset about that. They didn't know whether it was safe enough for me to be in the T-38s, and they worried about an ejection.

I think the thing that really calmed me down was that the responsibility of the pilot in the front seat flying the airplane, getting into some difficulty, and thinking that an ejection might harm the baby, waiting too long to make that decision to eject because of that added complication in the backseat of the airplane. I didn't want to hurt anybody else.

I spent several months grounded. It was okay. I didn't like to be restricted from doing things that I felt that I was capable of doing and that I was willing to take the risk on. I'd looked into some of the research on G-forces and pregnancy. They'd only done them on monkeys. It wasn't a big deal, in my mind, and I didn't think there was a very high risk of ever having to eject from a T-38. I think that was the only [time] that a decision was made for me. I continued my work in SAIL.

I continued my work in the rescue helicopter world. As I said, I grounded myself. I guess it was the third Space Shuttle flight. There was one that was on the Fourth of July in 198[2], and my baby was due the end of July, first of August. So that was getting close, and I didn't want a PJ to have to deliver that baby on the desert floor in California so I declined to cover that flight. I grounded myself from that one.

I continued to serve as the support crew for STS-6 and that flight had been delayed somewhat so it wasn't getting really close to flight. Luckily, the pregnancy went very well. I didn't have any problems. I worked on a Friday, went into labor on Sunday, and Paul was born on Monday. Unfortunately, he ended up spending a week in intensive care. Some breathing difficulties he had at birth. We got through all of that. I took six weeks off, but came into the office periodically, brought him in his little carrier, to check on things, and stay up on stuff. Probably went back to work sooner than I should have, but you don't know with your first baby, and I was anxious to prove that that was not something that I was going to spend a lot of downtime from.

Something to prove I guess, but it all worked out quite well. I got good care for the baby, had a lady that came in during the day, and got a lot of support from neighbors and friends. Made it all work.

Ross-Nazzal: Do you think that your pregnancy in any way changed the office or changed the way NASA looked at women in the astronaut corps or brought up new discussions?

Seddon: From having gone and talked to the three people I named about being pregnant, I had the feeling, with all three of them, that there was a great deal of surprise. Like, "Oh, my gosh, what is this?" I'm going, "We're women, we're young women, we're married women, two of us. What did you think?" I don't think they had thought it out. It was like they were going to deal with it if and when it happened, and that's what they did.

Now they may have had contingency plans in place early on through Flight Medicine, but I didn't get the feeling that the folks in Flight Medicine had a definite plan either. It just said, "Okay, this is another people issue that we need to deal with as part of the astronaut program, and as part of having women." They did that. I don't think there was a great deal of flap about it, concern about it, or worry about it. Obviously they had to make some decisions about the flying restrictions. When did they want us to tell them that we were attempting a pregnancy, so that they wouldn't assign us to a flight crew, they made some decisions about that. They looked at the Air Force and the airlines to see what their regulations were and did some looking into what should our rules be. I don't recall that they ever asked us to help define those rules. Those decisions were made at other places at other levels, and then we were told, "Here's the rules."

I think there had been always a rule that you didn't fly in space when you were pregnant. I think we understood that. They did a pregnancy test on us in our preflight physicals. As far as I know they still do. Two days before launch you get a pregnancy test. I think it's the unknown about having a pregnancy in weightlessness, not that they predict anything bad will happen, but they just don't know. They want to make sure that that doesn't occur, and you can never come back to NASA and say, "You let me do something that was unsafe for this baby."

I think obviously they have followed all of our pregnancies and the babies that have been born to see whether or not there are problems that were unforeseen. Are there more birth defects, are there more miscarriages, are there more difficulties? I think one of our flight surgeons told me the biggest health problem that the women astronauts have is infertility and not because we have any problems with fertility, it's because we wait till we're 40 to decide, "We've got our flight, now we're going to have a baby." I think it's the fact that we are older mothers, or older people trying to get pregnant, but as far as I know they have not identified any difficulties with people. I obviously had my first before spaceflight. I'd done a lot of airplane flying, jet flying, altitude flying, with increased radiation. I had my first before. The second son was born four years after my second flight. My daughter Emilee was born two years after my third flight.

I know that Eileen [M.] Collins got pregnant right after her first flight. She has a beautiful little girl and has had another one since. So I think they have determined through careful watching, not through any restrictions or other things, that women have kids and spaceflight is not something that is a problem if you want to have a family.

Ross-Nazzal: Did NASA have a maternity policy at that point?

Seddon: No, since we were government or military employees, they just used the government's policy. You can use your sick leave and your annual leave. Then after that you can take leave without pay. I think that was the rule. I think they were very flexible about how much time you wanted to take off. I think there was a little bit of pushback. My second child, I decided to take three months off. When I told the chief of the office that I planned to take three months off—the baby was born in the end of March, I was coming back after the Fourth of July—the eyebrow raised. I was told, “We do need your help in the office.” So there was some pressure, but I had that much sick leave saved up. I didn't feel like I was bucking the system in any way, but I think men take a different view maybe of having babies and what it takes. I think that's changing. Sometimes you felt like they felt you were getting special favors, that you got to take a lot of time off. I was glad that with the second and third baby I had enough leave to take three months off. That was so much better, so much more relaxed, so much more time to get to know that baby. And NASA went along just fine without me for those months.

Ross-Nazzal: Did I read correctly that your first son Paul was referred to as the astrotot? There was a lot of interest in him?

Seddon: He takes great pride in being an astrotot. I guess there are not too many astrotots. I think Time Magazine coined the term when they announced Paul's birth, or perhaps maybe one of the newscasters said it. It's a child born to two astronauts, I think. So when Paul is asked to introduce himself and tell something special or different about himself he says, “I am the world's first astrotot.”

Ross-Nazzal: There seemed to be a great deal of interest in the baby. I know you were on Good Morning America. Was that something that you worked with NASA public affairs to arrange those interviews?

Seddon: There was just some interest in it. It was unusual I guess. Paul spent a week in intensive care. He was flown up to the big hospital in Houston from our local hospital. He got his first helicopter ride before he was 12 hours old. Then I went up there, and they were kind enough to let me stay up there with him, for about three days. After he'd come home, and we'd had a few days at home with him, they asked if we would come back and talk about Life Flight and the newborn intensive care unit that had been so good to us. They needed people to know what a great resource they were, what great work they did.

How could we refuse? So we did a little press conference with Paul, and we probably did some other things with him. Just because it was new and unusual, astronauts hadn't had babies before that. There was interest in, “Was I going to go back to work? Did I think I would still get a chance to fly in space,” some things like that. I think NASA was happy to show life goes on. It's normal for our women astronauts, and we're all for it.

Ross-Nazzal: Were you happy to do those press conferences?

Seddon: Sure, happy to do it, especially the one about the NICU [Neonatal Intensive Care Unit], our local hospital, our pediatrician, and the Life Flight people. That was a nice payback to all the people that had taken good care of us.

Ross-Nazzal: What advice did you give to Anna when she found out that she was pregnant?

Seddon: I think I just told her how I had handled the pregnancy, why I made the decisions I made, what restrictions I'd had. I think that I knew she was going to make her own decisions. She probably didn't tell me until after she told everybody else. She may have, I don't even remember. I knew she was going to make her own decisions. She had sort of the same pressure that I did, to prove that you could do that, still do your job, your brain still worked, your body was still in reasonable shape.

I was so proud of her. She was a Cape Crusader. Have you heard that term? Someone who works at the Cape getting people ready to fly and the vehicle ready to fly; she was a Cape Crusader, and they had to do, from what I heard, emergency rescue of the crew out of the Shuttle. She's in there in a borrowed flight suit that will fit over her eight-months-pregnant belly, dragging people out of the Shuttle, and I thought, “You go, girl!” I think it proved, once again, to NASA that we were different. We were going to handle our pregnancies differently. It was part of a normal life. We were healthy women, and we could do this.

Can't remember how much time Anna took off with her first baby, but she came back and did good work. We shared information with each other about how do you find someone to take care of your baby and what do you do if the nanny is sick. How do you handle when both of you are out of town at the same time, and which of the other astronaut spouses will take care of your sick kid if you absolutely have to call upon them. We didn't have the usual group of close women friends that we drank coffee with and chatted with on the street corner; we were out there with a whole bunch of men, and our families were dispersed so we tried to help each other I think. That was okay.

There were a lot of things that I didn't know that I wish I'd known. I wish I'd had female friends to just sit around and chat about but that just wasn't the way it was. I didn't have a momma nearby or a sister nearby that could provide all that extended family help. I just had to go about it the best way I knew how. Quite frankly, there were some of the other women engineers at the time who came by and were wonderful, and just volunteered. “We heard you're pregnant; we're so excited about that. We have kids. We've faced this odd hours, finding care, maternity clothes, come talk to us,” and I did. Finally we were getting more women at NASA. We were all kind of a close group I think.

Ross-Nazzal: Did Shannon, since she had had children before she became an astronaut, did she offer any sort of advice to the two of you?

Seddon: She probably did somewhere along the way, but her kids were a bit older. She'd had them when she was, I think, a college professor, was a little bit different. I'm sure she did provide some words on pregnancy. I just don't remember the specifics.

Ross-Nazzal: Let's back up and talk about your engagement. I'm looking at yours engagement ring.

Seddon: Wedding ring.

Ross-Nazzal: Wedding ring. I've noticed on the [biosheet] photo, because I was always trying to identify what that was. It's very unique. Would you tell us about that?

Seddon: That actually was a replacement wedding ring, tenth anniversary present. When Hoot and I married, he was kind of a pauper so I didn't get a big diamond engagement ring. That was okay. I wore my mother's wedding band that had diamonds in it, so that was very nice. For our tenth wedding anniversary he asked me what I wanted, and I told him I wanted a wedding ring that he designed. A number of people had worked with a jeweler from Los Angeles [California] who designed unique jewelry for us. He was always happy to do something special for astronauts. I sent Hoot to him.

It's the astronaut symbol, the shooting star through the oval. It has ten diamonds in the band and then it has the children's birthstones at the bottom. We only had two children at the time, and the ring had

three prongs. I don't know whether that was meant to be. It turned out that their birthstones were red, white and blue, which is interesting. Maybe some things were meant to be at that time. Hoot gave that to me when I was in quarantine for my second flight, so that was special too.

I think we got to know each other through flying. Then we dated for a year or two. We were pretty sure that we were going to get married, it was just a question of when do we want to do this. Both of us were so involved in STS-1. I think he asked me Valentine's Day in '81.

[End of interview]

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