

NASA JOHNSON SPACE CENTER ORAL HISTORY PROJECT

EDITED ORAL HISTORY TRANSCRIPT 7

SHANNON W. LUCID
INTERVIEWED BY JENNIFER ROSS-NAZZAL
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ROSS-NAZZAL: Today is June 24th, 2021. This interview with Shannon Lucid is being conducted in Houston, Texas, for the JSC Oral History Project. The interviewer is Jennifer Ross-Nazzal. Thank you again for taking time this morning to meet with me for a quick session.

LUCID: I'm very happy to.

ROSS-NAZZAL: One of the things we didn't talk about last time—we were talking about STS-34, but we didn't quite finish—was quarantine. I wondered if you would talk about that experience for this mission. Your kids were getting older. Did you have a chance to see your children while you were in quarantine?

LUCID: The girls, where were they? Maybe they were in college. They most probably were in college, but Michael was not 16 yet. If they weren't 16, you couldn't see the kids. For STS-34, it made it hard, because we had so many delays. Every time we were delayed, several times we came back, but the delay was going to be so short that we couldn't come out of quarantine. We stayed in the crew quarters. Of course, Mike could come over, spouses came over, but the kids couldn't.

ROSS-NAZZAL: What did you do when you were in quarantine?

LUCID: Oh, you worked. Everybody always had stuff that they wanted to come and talk to you about. Depending on when you were in quarantine, then you would do simulations and you would go do the last one. When you came back, you would do more, especially ascent and entry. There were always last-minute changes, and everybody was coming in with their last-minute changes.

There were very nice things about quarantine too. There was somebody that fixed all your meals, and they were very good meals, and somebody cleaned up so you didn't have to do any cleaning. You didn't have to clean any bathrooms. It was just like a little vacation. Then the spouses showed up for meals. Of course, you did miss the kids and all. But there are certain advantages to not being home and to being taken care of.

ROSS-NAZZAL: That sounds nice.

LUCID: Oh yes. I always brought some books and would read in the evening.

ROSS-NAZZAL: Did your crew bond over any movies or TV shows or anything like that?

LUCID: On that crew I don't think so. Sometimes they would be wanting to watch a movie, and of course if you're part of the crew then you watch it with them. I always thought watching movies was a little waste of time. You could be using your time more productively, like reading a book. I've just not ever been a big movie person. I realize that's a lack in my life, but that's

the way it is. No, there was nothing particularly. Maybe some people were listening to some baseball games, but that wasn't part of my world.

ROSS-NAZZAL: That wasn't your thing.

LUCID: No. I still remember back when I was in high school. That was long before we had TV. We were in school. We were supposed to be learning something, and over the loudspeakers all afternoon long they would play baseball games. I just couldn't get over what a waste of time that was.

ROSS-NAZZAL: That's interesting. I would never think that that would happen.

LUCID: Well, it did.

ROSS-NAZZAL: You didn't have a professional team, so that's interesting. One of the things we didn't talk about on STS-34 was the deploy of Galileo, which you were in charge of. Would you talk about that deployment and how things went?

LUCID: Fortunately, everything went really really well. You look back on the history of Galileo, there'd been people that had been working a good part of their career on Galileo. It was first going to be launched on the Centaur; they'd planned for that, and then it wasn't. Then they had to figure out, because it was on an IUS [inertial upper stage], how they could launch it and fly it

around Venus and get it to Jupiter. But all those guys at JPL [Jet Propulsion Laboratory, Pasadena, California], oh my goodness, they were such geniuses, and they figured all this out.

We went out there, and we met them. They were so intense, obviously, invested in their payload and wanting to get it done. You just really felt—oh my goodness, I hope we don't screw anything up, because that would have been really really hard to think that you threw a switch wrong and ten years of their lives had gone down the drain.

Back in those days, you launched, and a lot of times your major payload work was right after launch. We launched, we got into orbit, and I think there was a problem with the flash evaporator. It was hot. It was really really hot. They hadn't been able to get the Shuttle to cool down. We were all very hot.

But we got working, and we got the payload bay doors opened. Ellen [S. Baker] and I were the launch team for Galileo. We just started going down the payload checklist and getting everything done. There were a few semiglitches. When we were in training one of the trainers had said, "Okay, now if such and such happens, if it doesn't lock right up, then just hang on because it takes a while; don't go doing anything." Sure enough, that happened. We just waited. Then it got locked up. A couple other times it lost lock. We were just patient and everything resolved itself so that we didn't have to go into any major malfunctions, which was a good thing.

Ellen and I, we were a good team, and we worked really well together. We got Galileo launched. Oh, my goodness, it was such a relief to see it leave the payload bay. We both breathed a big sigh of relief, because as soon as it got out of the payload bay it was not our responsibility anymore. It belonged to the guys at Sunnyvale ["Blue Cube" Air Force Satellite Control Facility, California] because they were doing the IUS and then JPL.

Interestingly, the night before we launched, there'd been an earthquake at Sunnyvale, so then when we got up we were told about that. But they had decided they could go ahead and launch because Sunnyvale was able to work around whatever happened in their Control Center due to the earthquake. It was great, the deploy.

ROSS-NAZZAL: Was there any difference between that deploy and the deploys you did on [STS]-51G? Were they pretty similar?

LUCID: Oh yes, those were PAM [payload assist module]; this was an IUS. This was much more involved.

ROSS-NAZZAL: Did you make any suggestions for improvement on any of the deployment procedures while you were working on this mission?

LUCID: We just did a lot of training in the SMS [Shuttle mission simulator], and things were pretty well set out by the time that we got into the training.

ROSS-NAZZAL: Would you talk about that anecdote about the "romance of adventure?" I thought it didn't quite sound like you, but I thought it was very interesting that you shared that anecdote.

LUCID: Sometimes I just talk off the top of my head. We were just so happy after Galileo launched. The ground said something, and I said, "Yes, it's a great adventure." Because it had

struck me how Galileo was written on there, not in engineering type letters, it was more like you would have seen in a book of poetry or something like that. Then the NASA worm was out there in its straight engineering. It just struck me that great adventures take both sides of your brain: the romantic side, the imaginative side, but to carry off a mission you need to have the engineering side too where you just deal only with the facts. That's what I was referring to.

ROSS-NAZZAL: It was a great story. I just wanted to check with you because different people, when we talk to them about missions, have very different recollections. It's almost like you're not on the same flight.

LUCID: But that's very true about anything in life. If you want to understand the flight you need to talk to lots of people, including the ground, because it's all a big team. Everybody sees it through their own little slot. You get different perspectives, so it's very good to get a total view.

ROSS-NAZZAL: I would agree with that. I thought this one was interesting. Franklin [R.] Chang-Diaz said that you almost aborted the flight in orbit three times because of malfunctions due to the IUS and Galileo.

LUCID: No.

ROSS-NAZZAL: He also said that he thought if you had to land in Senegal it would have caused an international incident.

LUCID: If we had to land where?

ROSS-NAZZAL: In Senegal. That must have been one of the emergency landing sites.

LUCID: It might have been. Who knows? I don't know what was going on at that time.

ROSS-NAZZAL: I assume he was referring to the plutonium, maybe. I wasn't entirely sure.

LUCID: We had an APU [auxiliary power unit] message, but the ground rapidly said it wasn't a problem. Then we had the flash evaporator problem, but there was no feeling that we were going to abort for those things. And the IUS, it was never an issue.

ROSS-NAZZAL: You were talking about the flash evaporator issue. Is that something all the members of the crew pitched in on? Or you and Ellen were primarily focused on the deploy?

LUCID: That's right, but Mike [Michael J.] McCulley the pilot was quite involved. The three of us were getting the payload bay doors open, and we were all working with the ground to try to get the flash evaporator problem resolved.

ROSS-NAZZAL: I did want to ask you just about one experiment because I thought it was interesting. There was a student experiment on board involving, I think it was ice or icicles. Do you recall that?

LUCID: I remember that it was on board. I remember that there was a fair amount of discussion about it because there was nothing else particularly going on, because the big thing for STS-34 was getting Galileo out, and after that we were just getting ready to come home. That was back in the days when there was a feeling that the way we should be doing the Shuttle was up and down. That was so funny.

A few years later it got to be, once we get the Shuttle up, we need to keep it up for as long as possible. They went to the long duration flights. That was just interesting to see how that changed. There were two or three pilots in the office that were advocating launch, do the payload, get home. It was very interesting. But I wasn't directly involved in the ice experiment. I just remember there was some discussion about it.

ROSS-NAZZAL: I did see a video of you measuring the carotid blood flow in [Donald E.] Don Williams's neck. Was that part of an experiment?

LUCID: Yes, that was part of one of the experiments that we did.

ROSS-NAZZAL: I know that sometimes crewmembers are selected to be a medical officer when they would fly. Was that something that you ever did, given your background?

LUCID: Yes, I was a medical officer on some of the flights. I don't remember exactly which ones.

ROSS-NAZZAL: Can you talk about that and the training that you received? What was expected of a crewmember who was a medical officer?

LUCID: I just always enjoyed any of the training that we got to be the medical officer. You had to know some of the procedures. You learned how to take blood, but that was for specific experiments. You knew how to use a checklist and knew how to do whatever was needed if anybody had any particular type of problems.

ROSS-NAZZAL: Was it pretty much triage?

LUCID: Oh yes, you weren't going to do anything serious. Give out some pills.

ROSS-NAZZAL: On Skylab I heard they learned how to take out teeth.

LUCID: Oh, no, no.

ROSS-NAZZAL: But those were long duration missions. You had told me previously that your crew was shortchanged a day of food. Would you talk about that and the impact it had?

LUCID: Oh yes. As soon as we got up in orbit and I got my suit off, I was scrounging in the food lockers looking for something to eat because it'd been a while since breakfast. I was a little different than a lot of people; right after we got on orbit, I was always very hungry, so I needed to find something to eat. I was looking, and I thought, "Oh my goodness, we're shortchanged a

day's worth of food." I told everybody. No one seemed to be too concerned about it. Then finally after we got rid of the payload, they realized that we were a day short of food. It's not like we were going to go hungry because they always packed extra. For the last day we just mixed and matched whatever anybody hadn't eaten and got some good meals out of it.

The one thing I did find interesting is I thought that would have been a point of debrief when we got home, but it was never ever mentioned.

ROSS-NAZZAL: What did you think of the food? I've interviewed Vickie [L.] Kloeris who was in charge of food over at JSC, and she said that on Shuttle it wasn't a big deal, it was almost like you were camping. But once you got on long duration, food became so much more important. Did you have to eat other people's food? Did you like their food choices and selections?

LUCID: I always liked my food choices. I enjoyed the meals. I really enjoyed the meals. On some flights you had a little colored dot, like for instance the commander I think was a red dot, so all his food had red dots on his choices. Everybody had their food tagged. Then at some point I said, "Okay, we have a new rule. Anything that's left over like if it's a day one thing and has a red dot on it and it's day two or three, well, that one belongs to anybody. First come, first choice. You can no longer claim what you didn't eat on the right day." That worked out well.

ROSS-NAZZAL: Sounds like you took charge.

LUCID: Food was important.

ROSS-NAZZAL: You told me about the photo that Bill [William F.] Readdy took of you, and that's your favorite picture. Do you have a favorite picture from on orbit from the mission?

LUCID: Yes. There was a picture, and I assume Franklin took it because he was doing a lot of photography. But it was a picture of Ellen and me back on the back panel on the flight deck, and I had my sunglasses on and she was there. I don't know who started it, but some people started calling us the women of *Atlantis* because I guess we were the deployment crew and we were on *Atlantis*. That picture was the women of *Atlantis*. Actually, we gave that to some of the people like the flight director. You know how you would give them pictures from the flight. That's the one that we chose to give to people who we thought had really contributed a lot.

ROSS-NAZZAL: I did find a picture that I thought was interesting, so I wanted to ask. It was a crew picture and Ellen looked like she was holding an elephant. Did that signify anything? It was a stuffed toy. Was that anything particular?

LUCID: It might have been something she had for Karen. When we launched, Karen was just learning to walk because I still remember seeing her with Ken on the tarmac there and she was toddling around in her cute little pink outfit. That was Ellen's first child.

ROSS-NAZZAL: You never know if something is a mascot or whatever, so I always have to ask.

LUCID: No, I think it must have been something for Karen.

ROSS-NAZZAL: We talked a little bit about the launch entry suit. This was the first flight where you reentered with the suits. Did that complicate getting ready to reenter the Earth and getting everybody suited up?

LUCID: Yes, it was. When we came in on [STS]-51G we were just in the blue coveralls, and you didn't have to do anything particularly except put them on. With the suit it took a little longer to get into it, and some people had a harder time getting in the suit than other people, just because some people are more limber than other people. Ellen and I helped everybody get in their suits. It took a little bit longer, and you had to plan ahead a little bit.

ROSS-NAZZAL: Did you wave off a couple of times, or did you come in early? I'm trying to remember.

LUCID: I'm not sure. You'd have to look back. I just remember that we spent a lot of time because they thought we'd overheat, so they spent a lot of time cooling the cabin down. It got so cold. It really got cold.

ROSS-NAZZAL: Why did they think you were going to overheat? Because of the APU?

LUCID: I don't remember. I'd have to look. I just remember being so cold.

ROSS-NAZZAL: Even in the launch entry suit?

LUCID: Oh yes.

ROSS-NAZZAL: Wow, that is cold.

LUCID: It was cold.

ROSS-NAZZAL: Those things look bulky. Any other memories from landing? You mentioned Mike and Michael coming out. Are there any other memories that stand out?

LUCID: No, Mike and Michael were there. I'm just really glad that both of them were there and that Michael got to go because how many times are you going to be able to be on the lakebed out there at Edwards [Air Force Base, California]? He had a good time. He was taking pictures of the little flowers, the little plants that were coming up through the cracks. That's several of his pictures. He didn't get any of the Shuttle, but he did get lots of the plants.

ROSS-NAZZAL: He had different interests. Would you talk about some of the PRs [public relations events] following this flight? You went to DC and you ran into your former colleague John [M.] Fabian, and you were explaining what had happened on board.

LUCID: I think it was a Fourth of July celebration, and the White House was honoring NASA. They had a picnic out on the White House grounds, and they had invited people from NASA, anybody who could come. There were quite a few people there. I saw John Fabian. It was the

first time I'd run into John Fabian in a while since he had left NASA. We were standing there. We were talking, and he said, "Well, what was your job on STS-34?"

I told him that Ellen and I were the deploy team for STS-34. He looked at me and he said, "Well, that's a sneaky way of getting two females to be totally in charge. I think that must be the first time that that happened." I don't know if that's true or not, but he said, "I think that's the first time that the major payload was totally run by females." It could have been. I don't know. I'd have to look back, but it was so funny. He said, "I guess NASA is improving."

ROSS-NAZZAL: Did you get a chance to go out to JPL and meet with some of those scientists and engineers?

LUCID: Yes, we went out to JPL, and they were so happy. Actually, there were some people from JPL at landing. They were just very very happy to see the Shuttle come back and the whole thing. What was interesting though, because of the different orbits they had to design for Galileo to get to Jupiter, it took just over five years, I believe. It was so funny because right after we launched, I thought wow, Karen—that's Ellen's little girl that I just said was one year old, roughly. I said, "Wow, she's going to be in kindergarten before this gets to Jupiter." It just made you think about how vast space was. You saw this probe leaving the Shuttle and heading out. It would take until someone on Earth had grown up enough to go to kindergarten before it would reach its destination.

ROSS-NAZZAL: Did you follow the mission much after the deploy? Or were you busy with your own missions?

LUCID: Oh, no, they told us how things were going. Of course we were interested.

ROSS-NAZZAL: I don't think I have any other questions. Thank you.

[End of interview]