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PEGGY A. WHITSON
INTERVIEWED BY JENNIFER ROSS-NAZZAL
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ROSS-NAZZAL: Today is September 6th, 2012. This interview with Dr. Peggy Whitson is being conducted in Houston, Texas for the JSC Oral History Project. The interviewer is Jennifer Ross-Nazzal, assisted by Rebecca Wright. Thanks again for spending some time with us this morning.

WHITSON: No problem at all.

ROSS-NAZZAL: Appreciate you carving out some time for us. You became the first female chief of the Astronaut Office and as I understand it as well the first mission specialist or scientist in the corps to be selected. Can you tell us about what that says about the office in terms of gender, science, and all those sort of issues?

WHITSON: Well, I think being the female was actually probably less of a step than being a nonmilitary/nonpilot astronaut. I think that was a bigger step for our office, to transition from always having military guys to a nonmilitary chief of the office. I think that was in some folks' mind a little harder. I think they thought my leadership style would be different because I was civilian. They were unsure. In the end, I don't think my leadership style was particularly that much different than anyone else's, and so I think folks adjusted into that. But I think it was a little bit of a shock to everyone that hey, it's a nonmilitary person. Is it going to be different now?

Being a female, I think that one happened to be just being in the right place at the right time sort of situation. I've been lucky that way a number of times in my life. I'm thrilled to have been there and been able to take those steps. But again, I don't consider the female part as big as the nonmilitary nonpilot part.

ROSS-NAZZAL: That's interesting. That is a pretty big change for the office. Is the chief of the Astronaut Office—I'm curious. I don't think anyone's ever told us. Is that a "elected" position? Or is that something that you competitively apply for and put in for?

WHITSON: The head of Flight Crew Operations makes the decision and typically it has to be passed up through the chain above that, because it is a pretty visible office so it does need to get some approval from above. In my case, Brent [W.] Jett was a big proponent of mine and selected me to be the chief of the office. He was at that time the head of Flight Crew Operations.

Because I had a history of spaceflight and was pretty well known, I don't think it was—hopefully it wasn't too hard of a sell for him to convince folks to have me be the chief of the office. I think he thought it was an important thing to transition to somebody that had Station experience, as opposed to Shuttle experience. At the time I had [the] most Station experience in the office and had served as a commander on board the Space Station. I think he felt like that was a good transition for where the program was heading in the future.

ROSS-NAZZAL: Did he approach you with this idea? Or was this just something that came out of nowhere that you were surprised by?

WHITSON: No, he had told me that that was what he was interested in doing and wanted to make sure that's what I wanted as well. Immediately after my second spaceflight he started talking to me about what would be my preference in terms of a position, and so that was what we discussed. At the time there was some discussion about whether or not I would fly another Shuttle flight or take this position. I ended up selecting just to take this position. Knowing even then that I wasn't sure if I was going to fly, and that if I did choose to fly, I would have to step down to do that.

ROSS-NAZZAL: So what are the main duties of the chief of the Astronaut Office?

WHITSON: We support, and provide the crews that are trained and ready to fly in space, and all the things that go behind that. This involves supporting crew members in training, doing procedure development, hardware fit checks, providing CapComs [Capsule Communicators] for the crews that are on orbit. In addition to the actual on-orbit operations support we also have crew members who provide their expertise in areas for future vehicle development so we have folks involved with Orion and Constellation or Exploration Programs. For the new commercial crew providers we've had people integrated into their organizations as they develop their new vehicles to have our experienced crew member insight.

So we have a pretty large organization from that perspective of supporting all those activities. The size of the office, from an astronaut perspective, is determined by the manifest and the number of crew members that we need to provide in this year and a five year out manifest plan. Taking into consideration how long the training flows are and the fact that we

have, for instance, for ISS [International Space Station] training, we have about 12 people in training at any one given time, because it's a two-and-a-half-year training course.

It's challenging because you don't always know how the manifest is going to change or the direction of the program. So you have to have that capability to surge when needed, to provide all the resources that NASA needs in terms of astronauts.

ROSS-NAZZAL: Talk to us about selecting crews. I understand that's one of the responsibilities of the chief of the Astronaut Office. How do you determine who best to serve on a crew and what skill sets are needed, things like that?

WHITSON: Well, what skill sets are needed is obviously driven by the mission. So selecting crews for a Shuttle mission, we would need a commander, a pilot on the Shuttle, and then whatever the tasks were, whether it was robotics or EVAs [Extravehicular Activities], the spacewalks, or other specific transfers or anything else that we need a specialist in. For a Shuttle crew you could pick and choose the experts based on that. You also have to take into consideration that for most crews you want to interleave some experience with some inexperienced people so that you continue to have that flow of experienced people available as people attrit, the older folks attrit and leave the agency, or leave the Astronaut Office. We want to maintain that capability.

For ISS crews, it's a little bit more complicated, because you have to have these people be able to support all different activities so one person has to be able to potentially be the commander, has to be the EVA specialist, has to be the robotics specialist, has to be able to perform the scientific activities, and has to perform all the maintenance procedures. We have to

find in one person the capability to do all these things, which I think is a little more challenging for the ISS guys.

Then throw in on top of that if they're going to be the left seat crew member in the Soyuz, which is the copilot version of what we would have in the Shuttle. For that job they also have to be at a very high level Russian language capability, because all that is done in Russian language, written and spoken in Russian. That adds another level of complexity.

Then putting the crew together I had to think about experienced and inexperienced crew mixture. I also wanted to ensure having a strong enough EVA crew member and potentially matched up with a less strong EVA crew member. But because the Soyuz launches only three crew members at a time, I would have to plan crews based on the two-to-four-month overlap between each of those Soyuzes. On board capabilities, EVA, robotics, and the like, had to cover a plan such that it was independent of the Soyuz launches. It actually gets actually very complicated at times, because one decision is going to bias how you make the next one and then the subsequent one after that.

That intricate linkage is a challenge, but that makes the job interesting.

ROSS-NAZZAL: Yes. A little different from when Deke [Donald K.] Slayton was head of the office and there were a lot fewer astronauts. So how do you keep track? How many people were in the Astronaut Office when you were chief?

WHITSON: We actually transitioned quite a few folks and attrited a lot of folks in the post-Shuttle era. I think when I started we had close to 80 astronauts, and when I finished three years later we had 53 active astronauts.

ROSS-NAZZAL: That's a lot to juggle. How do you know who's doing what? How do you keep up with okay well I can't assign this person, because they're off doing NEEMO [NASA Extreme Environment Mission Operations], or they're doing this project and that project? How do you do all that? Is it with support staff? You have computer programs? Whiteboards?

WHITSON: Well, obviously we have staff that help us in each of the areas to try and make sure everyone's trained. If there's somebody that has a deficiency in an area then we try to get them up to a certain level.

I took inputs from my branch chiefs on people's performance. I guess being somebody that's not the most highly skilled person in the world, hard work counts in my book too so that was a factor in who I might give preference to a flight for. If everything else came out even, that was a factor. So I took a lot of inputs from the branch chiefs and from my deputy chiefs to make that decision. In the Station training program things would change over the course of very short periods of time so even though I might have a plan that went out a year and a half, invariably I'd have to change it, and come up with another plan based on some change in either what was going to be happening during the mission or crew member changes, etc.

It was always a very dynamic process. Again that makes it interesting. It can get a little frustrating thing at times, but I wasn't bored.

ROSS-NAZZAL: Were all the Shuttle crews selected by the time you were selected as chief?

WHITSON: Actually all the Shuttle crews were selected, but then we added an additional Shuttle flight. So I did get to select one Shuttle crew. I selected the STS-135 crew.

ROSS-NAZZAL: How did you come up with that crew? Because that was very small compared to some of the other crews.

WHITSON: Yes it was. Because it was only a four-person crew, it needed to be four experienced people, because they had to do the job of what's normally done by five or six crew members. So we were selecting for a very talented crew. Also because it was the final crew I wanted it to be a group of folks who could handle the PR [public relations] associated with being the final crew.

They needed to have that capability in addition to all the technical ones that we needed to get the job done on the mission. I ended up picking Chris [Christopher J.] Ferguson, who was at the time my deputy, to be the commander. He had previous flight experience, and my experience working with him as my Deputy chief of the Astronaut Office was that he was extremely capable. He just did a phenomenal job with the public relations and the outreach, making sure that all the Shuttle employees knew how much they were appreciated. He did a fantastic job.

Doug [Douglas G.] Hurley was his pilot, and he also had a lot of experience. I had no questions about him at all either, and he was a good component to Chris Ferguson, "Fergie." Sandy [Sandra H.] Magnus and Rex [J.] Walheim were also selected. I needed one strong EV crew member for contingency scenarios, and that was Rex with his previous EVA experience. I also wanted an expedition crew member because there was going to be a lot of transfer involved, so I wanted a previous expedition Station crew member in order to make the process most

efficient. Sandy has some amazing organizational skills, and she was the best choice for that. All of them together, an extremely talented group, were able to accomplish all the tasks that normally a five- or six-person crew would have to do. They were very efficient workers and just great people. I think it was a good choice.

ROSS-NAZZAL: When you came on board did you switch out a lot of folks in leadership positions? You mentioned that there's different branch chiefs.

WHITSON: I did move a few folks around, which is not all the uncommon in the Astronaut Office. The rationale for the changes depended on what I needed. In some cases I wanted to get to know people a little better because I'd been in two Station training flows and had been out of the office a lot, so I didn't know some of the people very well.

So I moved some people to positions where I would have more potential to interact with them. Others I knew had what I thought would be a very good capability and needed in some of the more complex branches. I moved them into some of the heavier-hitting branch chief roles and got to know folks in a different way maybe than I had known them previously. So I did move folks around. That's, not all that unusual in the Astronaut Office. We do move people around a lot. We have to be followers and leaders when we fly in space. Learning about people's capabilities, leadership and followership capabilities, is really important. So that's somewhat unique within our office that we do move folks around to look and have them demonstrate these capabilities and try and find them those opportunities so that we can understand strengths and weaknesses of everyone. It's important to know that when you're

trying to assign someone—what might make the best mix crew mixwise. It's much easier to do obviously if you know the people.

ROSS-NAZZAL: Tell us about your leadership style. You had mentioned that folks were a little leery about a scientist leading the office. What was your style? What did you take from other people who you had seen in that role?

WHITSON: I had been the deputy chief when Rommel [Kent V. Rominger] was the chief of the office. I think one of the best characteristics that I observed from him that I tried to carry over was his ability to get people to talk to him and explain things and ensure that they were sharing their opinions and ideas. At first I was a little surprised he was asking questions. I knew that he knew the answers to many of the questions he asked, but he was trying to get folks to be involved, engaged, and make sure that they were providing their positions and issues that they had, etc. So I think that was a good talent that I learned from him that I tried to carry over as much as possible.

He also is a very optimistic guy, which I think leaders need to try and show a positive side. We were in a very challenging time with the changes: the Shuttle transition coming to an end and then with Constellation being canceled. I thought it was important to maintain some optimism, although that had to be tempered with the fact that people don't want someone who's walking around with rose-colored glasses all the time either. They want leaders who understand and know the realities but can try and find a positive way to address the problems or issues or deficits if we have them. So I tried to do that. It was a time of dramatic changes and as a result

there was a lot of uncertainty out there that worried people. When you have that many changes going on, it really makes people uncomfortable.

ROSS-NAZZAL: How else did you try to boost morale with those two programs, one coming to an end, and one being canceled, besides being optimistic? Were there other things that you tried to do within the office?

WHITSON: I think the biggest thing I could do was communicate. That sounds easy, but when there aren't definitive directions and goals sometimes that gets challenging. When the agency's path was not clear, it makes it more challenging to convey that optimistically to anyone.

I think probably one of the most challenging and satisfying parts about being chief of the office is a lot of these folks that worked for me were a lot smarter than me. While this is not a bad thing, it can be a tad bit intimidating. So I think it was really important to draw on as much of that talent to help try and find solutions or define directions. I think that was important.

We had a big review by the National Research Council [NRC] of the Astronaut Office size and its significance in the post-Shuttle era. That was instigated by the OMB [Office of Management and Budget] putting in a line item requirement into the budget that required that we would have this review.

It was a big challenge to try and educate and address the concerns and misconceptions that were out there about the role of astronauts and our training mechanisms. I brought together a lot of the folks in my office to help come up with the rationales that we needed for the presentation that we had to give to the NRC. That process took over six months to develop all the information, present to the commission on three or four different occasions this information,

plus the additional information that was required after they presented a number of questions. It was challenging to try and convey that in a way that the NRC members could understand, and then portray back to NASA the importance of what we were doing and how we were doing it.

It was a very challenging time. We had a lot of folks dig in and help out with different aspects of the presentations and documentation. It was a great team effort. In the end, we were obviously very successful. The NRC came out and not only supported the process we were using but also if anything said that maybe we were pushing our margins a little too close in terms of the number of people that we had for out years. I was very pleased with the results from that. I couldn't have asked for a better outcome, but it was a huge team effort to get all these pieces arranged in a coherent, logical story. We had people making videotapes of certain aspects of training and developing lots of different charts. We developed white papers to go along with it just to provide all the detailed background of how we determine the size of the office and what we need in a crew member and why.

ROSS-NAZZAL: Who else was working on that effort? Do you recall?

WHITSON: Yes, we had a lot of people. My technical assistant Jennifer [L.] McDonald, did a lot of the software analysis that determines the size of the office. Steve [Stephen K.] Robinson was helping with a lot of the development of the ideas and charts and in particular the T-38 training. We had CJ [Frederick W.] Sturckow who was also involved providing expertise from the military and comparisons of military background and training. Dottie [Dorothy M.] Metcalf-Lindenburger was involved in developing some of the training videos that we showed to the

NRC. Sheri [Sheryl D.] Locke also was involved in developing the presentation and the videos and helping us put together that story.

Pat [Patrick G.] Forrester has a real good critical editorial eye and ability to look at the data from different shoes in terms of helping us put all the pieces together. Chris Ferguson initially was involved with that as well. [K.] Megan [McArthur] Behnken was involved too. It was very much a team effort. Everybody was doing bits and pieces. We were taking videos of different aspects of training, everything from language training to T-38. Just to try and educate people about what we were doing. Really the entire office was involved in what we put together in the end, and it was a huge effort. It was a very positive outcome.

ROSS-NAZZAL: Had the office had to do anything like that before that you could look back on?

WHITSON: The office, unfortunately, has to do versions of this type of thing every two or three years. We have to justify our existence, because we are a very public organization in the sense that we're the face of NASA, and at times the target. We come under the gun pretty frequently, particularly relative to size of the office and how we train, whether we need to use T-38s or how we could do this cheaper. It happens frequently, unfortunately. I was hoping this review might last for two or three years, at least, before we got to do another one.

ROSS-NAZZAL: You mentioned some of the challenges that you were facing, and our current Administrator is a former astronaut. Did you have a chance to talk with Charlie [Charles F. Bolden] and express some of your concerns and get feedback from him?

WHITSON: I talked to Charlie a few times. Not in very much detail. I think the administration was having a lot of issues themselves in terms of trying to formulate a vision for the agency. So I didn't bother him too much in that regard. I probably am much closer to Bill [William H.] Gerstenmaier and have known him actually a lot over the years. He's a very good counsel in terms of what the agency needs or doesn't need. I always asked him, "What can we do to help you make sure that we keep our agency on track? If there's anything we can do let us know." He's just an amazing, brilliant and down to earth kind of guy. He and I met during the Shuttle-Mir program, before I was an astronaut and before he was a bigwig. He was the operations lead in Russia during Shannon [W.] Lucid's mission on the Shuttle-Mir program. We've known each other a long time over the course of the years and as he's escalated up the management chain.

ROSS-NAZZAL: Talk to us about your role as chief of the Astronaut Office working with other directorates like MOD [Mission Operations Directorate] and FCOD [Flight Crew Operations Directorate]. What's your connection to some of those offices?

WHITSON: I think the Astronaut Office has a very important role to play in integrating with all those organizations. I think working with MOD is probably the most obvious one because they're responsible for doing mission operations. Luckily because I'd done two long duration spaceflights I knew a lot of the flight directors and actually the head of the flight directors was a guy that had worked with me during my first expedition, John [A.] McCullough, so it was easy to develop a very close relationship with MOD during the course of that timeframe. Even if we didn't always agree 100 percent we always went together to the program or to anyone else. When there were issues or concerns we always wanted it to be a united front from Mission

Operations and the Astronaut Office. We strove to make it that way. It required a lot of communication and expressing concerns both ways so that we had our stories ready and intact. It helped us, I think, a lot.

We also work within the Mission Operations Directorate with the training team a lot. We have folks that are directly tied in with the training organization. Obviously, with a two-and-a-half-year training flow, there's always issues. It's done in five different countries and has to be coordinated. There are always issues that come up so we work closely with them as well.

The other organization we spend a lot of time with is the robotics and spacewalking organization, the EVA group. We met and coordinated with them frequently as well, and had teams interact at a lower level to ensure that our operations experience is integrated into their training and into their procedures, etc.

We also work with the ISS program a lot. I had worked with Mike [Michael T.] Suffredini on a couple different levels before. That gave us an experience base from which we were able to work well together.

I guess those are the big groups in terms of organizations that we would interact with. It was a real honor, I think, to be able to work with so many different organizations and groups in my role as chief of the Astronaut Office.

ROSS-NAZZAL: When issues would pop up, say there was a challenge on orbit, were you called in? Or was that primarily handled by MOD?

WHITSON: It depended on what the issue was. If it involved a crew member, I was called in. If it involved how things were being done, and they needed some expertise from our office, we

would be called in. So we provided expertise and background in a lot of areas, where there were problems for instance on any Team 4 activity, when the program and the Mission Operations Directorate would be trying to solve a big problem on orbit. We were, of course, involved in all aspects of these types of scenarios, whether it was EVA, robotics, fixing or making tools, or developing new procedures.

ROSS-NAZZAL: Are you involved in the flight readiness reviews and things of that sort?

WHITSON: Yes. We also provided information and data for the flight readiness reviews. Typically Flight Crew Operations Directorate, our bosses, represented us on the boards for most of those activities.

ROSS-NAZZAL: What are your assignments when there's a mission that's about ready to go up, like a Space Shuttle mission or a Station mission? Do you go to Russia? Did you go to KSC [Kennedy Space Center, Florida], and same thing with the landing?

WHITSON: Yes, I went to KSC for all the launches and almost all the landings of the Shuttles that were flying there. There were some conflicts where I would be in Russia for a Soyuz launch and so my deputy and I would divide up responsibilities. In those cases where there were conflicts, one of my deputies would go to one and I would go to the other. We are involved with the return of the crew from Kazakhstan after landing. The direct return of crews upon landing was developed during the time when I was chief of the office. This faster return process enabled crew members access to the facilities and the data collection here sooner. Since science is one of

our primary objectives for ISS, getting more data collection was an important aspect for developing this change.

So I would fly out on the helos [helicopters] to pick up the crews at the landing site with the Russian Search and Rescue team, and bring them back to our NASA aircraft to fly them back. It was very interesting getting to be a part of all that.

ROSS-NAZZAL: Any memorable launches or landings that you recall?

WHITSON: Let's see. What would be most memorable? In a sense every one is memorable, each individual one. From the Station side, the individual crew members provide so much flavor of what their mission was about. When they first land they want to tell you everything in the first 10 minutes; they want to share that excitement of their particular mission. So it's real special to be a part of that. Of course [STS]-135 is probably the most memorable Shuttle landing.

ROSS-NAZZAL: The end of an era, really.

WHITSON: Yes.

ROSS-NAZZAL: It was a big deal. I was going through the history and trying to think of things that you might have managed. You had a number of crises when you were head of the office, one of which when Mark [E.] Kelly's wife Gabby [Gabrielle] Giffords was shot in Tucson [Arizona]. There was some discussion about whether or not he was going to command the flight.

I think for a while he stopped training. Can you talk about that mission and how that impacted the office and what you were thinking about in terms of who was going to command?

WHITSON: Sure. Initially we didn't know what condition Gabby was going to be in, and whether or not Mark would be available at all. So we pretty quickly named a backup commander in case we needed it. CJ Sturckow, my deputy at the time, was named as the backup commander, just in case. Because the mission was only—I believe it was six or seven weeks away from launch—we needed a very experienced person to be able to just step in and take the reins if necessary. Over the course of the next few weeks, we were waiting to see what would happen with Gabby, and to make the decision on whether or not we'd go with CJ or Mark.

I think for the mission success, Mark was the right choice, from his experience over the course of his training flow, the year or so that he'd already been assigned to the mission and in training. So he knew the mission best. However, it was obviously a time when there were a few other things on his mind. So it made it a very challenging decision, which way to go. Whether to go with someone with less overall understanding of the specifics of the mission or someone who could be focused 100 percent on the mission. It was a big decision, a very challenging one. We ended up continuing with Mark on that mission as you know. I do think it was a challenge for lots of folks for lots of reasons because of a lot of the extraneous activities that were required as a result.

ROSS-NAZZAL: That must have been hard on the crew as well, not knowing who their commander was going to be for a while.

WHITSON: Yes, I think it was very challenging for the crew. I think CJ tried to just step in as seamlessly as possible and not cause any ripples. It was, I think, a challenging time for everyone, all the crew members as well as Mark and CJ of course too.

Obviously we had one other instance—I think it was a few weeks before, where I had to replace a crew member because of an injury. It was also too close to his flight for him to recover from the injury. That one was very challenging. That was Tim [Timothy L.] Kopra. He had been training with his crew for a year, and he was obviously very disappointed. He took it as a professional, because he understood, but it was obviously very very disappointing.

I got all the inputs from various folks and looked at how to split the crew training up. We ended up selecting Steve [Stephen G.] Bowen and then offloaded some of the other responsibilities that Tim had had. Tim had been MS-2 [mission specialist-2], which is the flight engineer on board the Shuttle, and plays a really important role. He was EV1 as well. So it wasn't an easy replacement in a short period of time, and we ended up replacing Tim with Steve Bowen because he had the EVA expertise. The EVAs themselves had already been worked out by Tim and Al [Benjamin Alvin Drew]. So the details had been pounded out.

It was just a matter of practicing the EVA. So we made Steve the lead EV crew member, but we didn't make him the lead in terms of the flight engineer responsibilities. We split them up between the people who had been the MS-1 so that we could more evenly distribute the training load in that last six or seven weeks before the launch of that Shuttle. So I had two instances in a very short period of time trading folks out.

That happened pretty commonly when I was deputy chief in the ISS arena, because of how the medical certifications went, where we had to change out a lot of crew members when I was deputy. Typically it was some last-minute medical issue. As chief, I changed the timing of

the medical certification process to better ensure that crew members who were not medically qualified were not assigned. That worked out better, such that we didn't have nearly as many of ISS crew change outs.

ROSS-NAZZAL: A little easier on you from that side, I guess. What kind of support did you provide for the crew members who were still assigned to the crew, and then the crew members who were thinking about maybe I'm not sure I'm going to fly, in Mark Kelly's case, or the individual who was removed from the crew?

WHITSON: Obviously we tried to be as supportive as possible, and we have a family support group that in cases where there's family issues, somebody's in the hospital, whether it is a crew member or their spouse. The spouses' network will get together and provide food for the kids and make sure the kids get to school, or whatever. We have a family support group that consists of the astronaut spouses primarily that works to ensure we have the right support for the crew members or their families as needed, depending on the situation.

I've had to worry about that and use that more often than I would like. But it's great that folks come together and do that.

ROSS-NAZZAL: How closely do you work with the family support group? Did you meet with them on a regular basis?

WHITSON: No, I met with them a couple times. It was typically just as information. We have a liaison in our office who works and interfaces with the family support team, sends out e-mails to

let folks know what's going on with the various missions and different aspects during the missions to keep families informed.

ROSS-NAZZAL: One of the things we didn't talk about was the famous Monday morning meetings in the Astronaut Office.

WHITSON: Famous? I didn't know they were famous.

ROSS-NAZZAL: I guess for us.

WRIGHT: Infamous.

ROSS-NAZZAL: Maybe that's it. Do you recall that first Monday morning meeting where you were chief of the Astronaut Office and came in for that first time? Any recollections?

WHITSON: When they named me we had an all hands meeting. I think that was more stressful, getting up in front of everybody at that all hands. I had been at and chaired many Monday morning meetings as deputy chief when the chief was out of the office. So that was to me a little more expected. So I think when I was named, when Brent got up and named me as the new chief, that was more stressful.

ROSS-NAZZAL: Any ribbing from your fellow colleagues?

WHITSON: No, I think there was some shock that day. Even the folks that had been proponents of mine were I think surprised that I had been selected, since there had never been a non-military chief.

ROSS-NAZZAL: You've had some new astronaut candidates come in since you've been chief of the office. What is your role in mentoring those new folks that come in?

WHITSON: Typically the chief of the office is the deputy chief of the selection board. I was actually the chair of the selection board for the 2009 class, filling Brent's role basically, because I was not chief of the office at the time. So I played a very key role in their selection, and knew them from the selection and those interactions during selection.

I felt like they were my kids. I was very much more, I think, invested in how their training was going, where they needed help, and making sure they got help where they needed it. I had several little social events where I'd bring them over to my house and talk to them about what my expectations were, and make sure they felt like they could talk to me if they need arose. I wanted them to not feel too intimidated to come and talk to me if they had issues or concerns. I worked pretty hard to maintain a relationship with that class, in part because I felt responsible, having chaired the board that recommended them for selection. I had much more ownership of them in my mind, a feeling of responsibility. So yes, I did pay a lot more attention to that group.

ROSS-NAZZAL: While you were chief of the office, there were a number of astronaut deaths, pretty well known astronauts like Sally [K.] Ride and Janice Voss. How does your office deal

with the passing of a former astronaut? Are you involved in the tree planting ceremonies and memorials and things of that nature?

WHITSON: Yes. Typically Johnson organizes and sets that up, but I was a part of those. Depending on who it was, I may or may not have anything to say, but always participating in those events, assuming I was here. There were a couple instances where I was in Russia at the time, but somebody from our office was always there at those events.

ROSS-NAZZAL: How do you respond to media requests for information or interviews? Because obviously people always want that sound bite about this astronaut and their contribution.

WHITSON: Typically our Public Affairs Office would interface with us, get our quotes, and would send them out in a press release so that it would all come from NASA. I guess in some instances we were asked for individual interviews, but mostly it's just for that sound bite they're looking for. Typically that was done in writing. So I didn't have to do too many interviews on that.

ROSS-NAZZAL: Did you do any interviews after the passing of Sally Ride, given your historic contributions to spaceflight and her [own]?

WHITSON: No. But Sally passed I think the day before I stepped down. But as one of the final tasks as chief of the office, I did write my comments about Sally and her contribution for the press release.

ROSS-NAZZAL: That was a sad day. I think it came out of nowhere for us. So what are you doing now that you're no longer chief of the Astronaut Office?

WHITSON: I'm actually involved in the selection board for the next group of astronauts. I'm just a member of the board. Right now we're taking the highly qualified down to determine the first 100 to 120 that'll be involved in first round interviews.

ROSS-NAZZAL: How many have applied this time?

WHITSON: 6,400. The first phase was very challenging. We went from 6,400 down to 450ish. This next phase is not any easier, unfortunately. The numbers are smaller but it's not easier, because everyone is so qualified. We are now at the phase where we are looking at recommendations and trying to sort through who would be the best ones to give the opportunity to have an interview.

ROSS-NAZZAL: That's got to be tough.

WHITSON: It really is, but I think it is a really important job. We have probably 15 folks from the office working on this phase, trying to hone down the numbers. We had 25 working the previous phase. So it's a big job, because we want every application to be looked at by two people or more. It takes some organization and lots of time, just to go through the drawers and drawers and drawers and drawers of applications.

ROSS-NAZZAL: When do you anticipate naming that class?

WHITSON: Hopefully next summer. We start round one interviews in October, should finish those in January, because of the holidays and Soyuz launches and landings. Then round two would finish probably March or April. Then we'll have them selected in the spring and start training next summer.

ROSS-NAZZAL: Once you're finished with this project are you hoping to be assigned to another Station crew at that point?

WHITSON: Yes. I would like to be assigned to a crew. That's why I stepped down from the chief of the Astronaut Office position. I'd like to fly again. I'm not willing to assign myself so I have to step down and hope somebody else will be willing to assign me.

ROSS-NAZZAL: I'm sure someone will, given all your experience. Well, I just had a couple of general questions for you. Looking back over your time at NASA, what do you think has been your greatest accomplishment so far?

WHITSON: It's been great because I've had a lot of really valuable experiences. One of the most valuable I would have to say was being involved in the Shuttle-Mir program the way I was as project scientist. Starting from nothing, given very little guidance, and making it into a successful science program was really important and an exceptional leadership training

experience. It was a fantastic team. We couldn't have had better camaraderie. So that was a really key experience to me.

Of course flying in space—both of my expeditions was a phenomenal experience. As I think I mentioned before, one of the most satisfying experiences from a day-to-day perspective working at NASA was that day to day contribution on board ISS. Feeling that each and every day that I was contributing, even if I was just cleaning vents on the Station, made it one of the most satisfying jobs I have ever had the honor to participate.

Other positions that I've held that I've taken particular satisfaction from are this job, chief of the Astronaut Office. Actually as deputy chief of the Astronaut Office I felt like I really contributed to the operations on ISS. The challenging aspects in retrospect made it more satisfying and fun. I've really appreciated all those experiences. I really feel lucky to have been exposed to so many different things over the course of these years. Hopefully there'll be a few more things yet to come.

ROSS-NAZZAL: Is there any one major challenge that you can recall over these past few years?

WHITSON: Major challenge. Oh, there's been so many. As chief of the office, just dealing with the changes, the close out of the Shuttle program, and the changes in direction from Constellation to Orion and Commercial Crew were some difficult times. The NRC report was another big challenge. The development and integration required to convey our message made me very proud to represent this group.

For prior challenges, I would say the experience on the Shuttle-Mir program was probably one of the most challenging things I've ever done.

ROSS-NAZZAL: I was reviewing some of the transcripts the other day and had to laugh about the negotiation skills you developed. I was thinking about Sally Ride's passing and so much was made about her contributions to girls studying science. I'm curious what you think your contributions or the contributions of women in the astronaut corps have been for encouraging kids to study science and engineering.

WHITSON: Well, I hope it's a positive one, I think it is. If it isn't positive, we're doing something wrong. Interestingly, in looking at applications this year for instance, we had I think more applicants from the CDC [Centers for Disease Control and Prevention]. We had selected Kate [Kathleen] Rubins in the previous selection, who is from the CDC. So it's fun to see that her selection may have opened up interest for a whole new group people.

ROSS-NAZZAL: Have you had folks approach you since you've been working at NASA saying you had such an impact on me, I heard you speak, and I decided to come work at NASA?

WHITSON: Not really too much. There've been a few people that have talked about it, but nothing as directed as your comment would be. I'm not great at the public affairs events. We have some people that are really talented at that. The ones I like doing the most are to young people. I think the best age is fourth graders, because they just are so excited, so open to new ideas, and the world is theirs. So I really enjoy talking to them.

ROSS-NAZZAL: It's a fun age. I'm going to ask Rebecca if she has some questions for you.

WRIGHT: I just have one. You mentioned it just a few minutes ago. There has been a lot of major changes affecting the astronaut program. You talked about your management style. Could you share with us some of the thoughts that you shared with your colleagues about let's hang in here and see where this takes us? Because so many of them, as the Shuttle program came to an end, they opted to move their career with NASA to an end too. So you're losing the program. You were losing your crew members, and you also were losing some of your friends that were moving on. Can you share some of the thoughts? How you were able to keep all that working together to move them forward?

WHITSON: Losing folks, as hard as it was, was the right thing to do. I knew that. I knew where we needed to be in terms of numbers in the office. So I was grateful when we lost those folks and they stayed in the space industry somehow or somewhere, because that meant we were still going to have some influence. It was important, I think, to recognize where we were and where we needed to be two or three years down the road.

Then it made that process easier. Communicating with the folks in the office about the necessity was something we talked about at staff meetings and town halls. Also, individually, I would talk to folks about it as well. People who were trying to decide what was the right thing for them to do—which direction should they choose. It involved a lot of talking with individuals to find out their desires and how to best fit them within the future of NASA and our office.

So I hated losing that many people, but at the same time I knew we needed to get our numbers down. So it was a considerable process to manage that.

WRIGHT: Now I'm going to ask you a question, a look at the future. You mentioned so many of your colleagues have gone off maybe to industry. With some of these folks actually being placed now in these commercial ventures can you give us your thoughts about how the astronaut corps will be working in the future with these commercial ventures and how you may be training folks to look at that as well?

WHITSON: Yes. We developed a white paper because we knew there was lots of talk about whether there was a need for an astronaut corps, in spite of the fact that we are still flying on ISS. It takes two and a half years to train people to fly a specific mission on board the Space Station. No commercial venture is going to take over that two and a half years' worth of training and integrating with international countries through intergovernmental agreements that we have established. We tried to lay out in our white paper what we thought the ideal process would be. We do think that the commercial companies are going to want to have their own pilots, but that during test flights we wanted to be involved. It is similar to the way the military does a lot of their development—they'll have what they call a joint test force. So we envisioned that we would do something similar.

Eventually then our crew members would be trained to launch and land those vehicles, to take them to and from the Space Station. The commercial providers may have other pilots that would do other missions with tourists or other people, but missions to the ISS would be flown by NASA astronauts.

WRIGHT: Lots of decisions and paths to be formulated at this point, isn't it? A lot of unknowns.

WHITSON: Yes. A lot of unknowns. But we just tried to lay out a plan—here's what the astronaut requirement is going to be, and here's how we envision you could potentially make it work. There was also talk about rental car versus taxi. Since the taxi driver version would require additional launches to carry the driver, we didn't consider that too feasible. In any case, the ISS crew members still need to be able to perform the emergency descent. So there are trades to every aspect. I think in the end it will most beneficial and efficient for our crew members who train the two and a half years for a specific mission to also include ascent and entry training to their plan.

WRIGHT: Always something new to learn, isn't it?

WHITSON: Yes.

WRIGHT: Thank you.

ROSS-NAZZAL: Challenging times.

WHITSON: Yes it is. It'll be interesting. Hopefully we'll get things going sooner rather than later on the commercial carriers, commercial providers.

ROSS-NAZZAL: I think we have reached the end of our questions. Is there anything else that you think we might cover?

WHITSON: I don't think I have anything else.

ROSS-NAZZAL: Okay. Well, we appreciate your time today.

WHITSON: Okay. Thanks.

[End of interview]