

# **NASA AT 50 ORAL HISTORY PROJECT**

## **ORAL HISTORY TRANSCRIPT**

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INTERVIEWED BY REBECCA WRIGHT  
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WRIGHT: Today is November 16th, 2007. We are at NASA Headquarters in Washington, DC for the NASA at 50 Oral History Project to speak with Charles Scales, NASA's Associate Deputy Administrator. Interviewer is Rebecca Wright with Sandra Johnson. In preparation for the space agency's 50th anniversary, the NASA Headquarters History Office commissioned this oral history project to gather thoughts, experiences, and reflections from NASA's top managers. The information recorded today will be transcribed and then placed in the history archives here at NASA Headquarters where it can be accessed for future projects. Do you have any questions for me before we begin?

SCALES: No, let's get started.

WRIGHT: All right. In April of this year, you assumed this role of Associate Deputy Administrator, placing you responsible for a number of things here at the agency. We'd like for you to begin today by telling us what those duties are and how you moved into this position.

SCALES: I wish I could tell you specifically what they are. They pretty much change every day. But generally speaking, I serve as the deputy to the Deputy Administrator [Shana L. Dale]. Until you've actually worked here, you really don't have an appreciation for what the Deputy Administrator and Administrator do on a daily basis. So my job is to help fill in the blanks. I

cover some of those things that she just can't get to because of such demands on her schedule. That can range from filling in for her at a speaking engagement at a field center or conducting budget reviews. Making sure the Operations Management Council (OMC) is scheduled and the agenda is appropriate for what she's trying to get done. But if I could sum it up, I help execute her vision and strategy for the things she wants to get done during her tenure here at the agency.

WRIGHT: Is there one thing in particular that seems to be more memorable in your short term in this job that stood out that you were able to step in and do?

SCALES: Well, generally speaking, what really is amazing is the pace which things occur here in the A Suite [Administrator's Suite]. It is most relentless. It's constant and it's full. But actually helping work the corporate G&A budget process has been I believe a tremendous help to Shana. Working with the various mission support offices here in the building and helping balance the budget needs across each of those mission directorates. Also being an interface for her into the HSPD-12 [Homeland Security Presidential Directive] project that's going on now throughout all of government and helping to keep that in focus and in line, and working with the different offices that's charged with implementing HSPD-12.

WRIGHT: You've been with NASA for more than 30 years and began your career as a cooperative education student.

SCALES: Yes, actually 35 years now. I actually started as a 19-year-old co-op student, a sophomore in college at the [NASA] Marshall Space Flight Center in Huntsville [Alabama]. My

first job was in telecommunications. I really loved that job and thought if I could just stay there for 35 years I would have been perfectly happy. Of course that turned out not to be the case. But that's where I started. I went to school at Alabama A & M University in Huntsville and was able to get the co-op job at Marshall, which is also in Huntsville, so it worked out fine.

WRIGHT: Tell us about your thoughts on how NASA has changed from when you started three decades ago to where you are now.

SCALES: Well, the change has been tremendous. It doesn't even seem like the same agency, except for the fact that the people who worked in the agency then and now are in my opinion, the best of the best. Now I say that with hardly any experience of working anyplace else. So I try to be objective, but keep that in mind, I've always been at NASA. Of course, if I had to do it all over again, I would still only be at NASA. But it's never a day that goes by, even now, where I'm just not really impressed with the caliber of people that work in this agency and their belief that borders on being cocky because we feel like we can do anything. Most of the time we can.

I started at NASA right after the Apollo program. In fact, the major program then was Apollo-Soyuz [Test Project] and then the [Skylab] program. In those days a lot of my management focus was Center-specific. I didn't have much insight into the Center-Headquarters relationship. There was a lot of onsite work done. In those days we did more in-house work, if we couldn't build it in-house we wouldn't buy it. One of the big changes that's taken place is we seem to depend on contractors for a lot more now. Sometime even to the point of having them tell us what we want. But when I started, it was just the opposite. If we couldn't build a

prototype then we wouldn't contract for it. So as time went on, we lost a lot of those kinds of skills. However, I do see some of that coming back now. So that's a good thing.

WRIGHT: What do you see as your role in this current position? You told us about your duties. But your role and even your expertise in doing what you've done in the past in working to help with the vision of space exploration.

SCALES: Well, my entire 35 years at NASA has been spent on the mission support side of the agency, or in past years, we called it the institutional side. When you're doing that kind of work, it really helps, if you learn to appreciate that particular role, that is the role of providing support versus working directly on a particular program or project. Once you understand your role, you can really have fun working in mission support organizations because you're not limited to supporting one program. You're supporting all of the programs, be it human space flight or science or aeronautics or what have you. So to me, it's the best side of the agency to work on.

WRIGHT: What are some of the lessons learned that you've picked up along the way that will help you meet those objectives?

SCALES: Well, in the early days working at Centers, Centers knew what would be needed in the future. They had to figure out ways to keep some under used facilities funded, even when Headquarters might not agree. But what I've seen happen, particularly with the current Administrator, is an appreciation for that, even to the point of identifying facilities that are not fully subscribed now and coming up with a way to fund those from an agency perspective. A

program called SCAP (Strategic Capability Asset Program), a strategic view to look at undersubscribed assets, get the funding to keep them alive so they will be available in the future. So it's gone from a Center look at figuring out a way to do that to a more strategic approach at the agency level. So I think that's been really really good.

WRIGHT: Budget must play an important part of how you get things done. Would you talk to us for a little bit about how budgets do impact what you do and how they can be impacting what you're planning on in the future?

SCALES: Again in the early days I can remember dealing with budgets twice a year, the initial budget and one update. Now budgets are 365 days a year. You're either planning, executing, modifying, changing, adjusting, or moving dollars around. Of course recently we hardly ever go into a year where we actually have a budget. We're constantly operating under a Continuing Resolution, and it makes it awfully difficult to manage when you're not sure what your final budget is going to be in an operating year. But you learn to work your way through that. It is time-intense. You learn to figure out what the highest priorities are of the agency and try to move dollars into those areas. But when you don't know what your final budget is going to be, it's difficult to plan. As you know we're at a point now where we're going to retire the Space Shuttle in a couple years. Ares [launch vehicles] won't be ready for a few years later, and there's this gap where we have to depend on another country for access to [the International Space] Station. Not a good position for a spacefaring nation to be in, but it all has to do with budget priorities for the country.

WRIGHT: How much of your role is involved in gathering that information from the different aspects to give to Ms. Dale and then on to OMB [Office of Management and Budget]?

SCALES: Well, I chair a monthly budget performance review for Ms. Dale for the mission support organizations, where we actually look at how the organizations are performing against the budgets they have, and try to watch for trends to see at what point we need to shift dollars from one organization to another, to see if we're headed in a direction where we may go over the cliff on some aspect of the budget, to make sure we don't get to a point where we have to do something hurriedly. So it's constantly watching the aggregate. Organizations focus on their piece of it, but someone has to pay attention to the total. That's a function I try to help Shana keep an eye on.

WRIGHT: You've had the opportunity to spend your career with NASA, so you've gotten a chance to see it grow over the last 35 years. What do you believe NASA's role is for society? What do you think it's here for?

SCALES: Well, in the history of the world, those nations that have grown have always been explorers. NASA for the United States is the one agency charged with exploration. We don't know what's out there, but we believe that it's our charge to try to find out. As we attempt to find out, as we go on those paths, there are all kinds of things that we discover. The benefits that we've gained for society as a whole over the last 50 years are just frankly immeasurable. They will have impact on society for as long as there is a society. Just the challenge itself has been so inspirational for not only the United States but for people everywhere. I think going forward we

will continue to play that role. As the President [George W. Bush] said, it's not an option we choose. It's a desire written in the human heart. Someone is going to do it, why not us?

WRIGHT: NASA has so many aspects to it for exploration and for science and aeronautics. Do you feel, especially now in this position, that aeronautics will still continue to play a part in the future as well as science along with human exploration?

SCALES: I do. I think our role in aeronautics is sometime underappreciated. I think when the flying public goes to Grandma's for Thanksgiving, they don't really have a full appreciation for what NASA has done to improve air travel and the safety involved in air traffic management and materials used to build aircraft, and deicing technology. All of those things NASA's played a tremendous role in. Maybe the public shouldn't say, "I feel better about going to Grandma's because of what NASA's done." But NASA's role in aeronautics has been good. When I worked at the [NASA] Glenn Research Center [Cleveland, Ohio] I used to love going down to the deicing tunnel where they do research on the impact of ice forming on the wings of aircraft and the proper way to deice aircraft. I think people don't really relate that to NASA research.

WRIGHT: You've worked at two different Centers as well as the Headquarters. Then you've worked in those different areas within the NASA agency. What do you feel are the characteristics of NASA that are at all three? Two very different Centers and then the Headquarters operation? Then what are the differences of working in the different places?

SCALES: Well, as you know, I spent most of my early years at Marshall, which is an R&D [Research and Development] Center involved with the development of the propulsion elements for Apollo and the Shuttle program. It has some operational responsibilities. It's a rather fast-paced Center. Lots of things going on. Lots of different programs. Not only just in human space but a lot of science work as well. I enjoyed working there. Glenn, as you know Glenn is a Research Center, and I guess the nature of research itself is somewhat slow and methodical. So that's something you notice right away. It's not good or bad. It's just a difference you notice, that the pace of things seemed to me to be a lot slower. But you have to understand that is the nature of research. But I really enjoyed working there and seeing the difference.

WRIGHT: How is it different working at the Centers than it is at the Headquarters?

SCALES: It doesn't even seem like the same agency. [Laughter] I always try to describe it when I'm talking to groups, when you work at a Center and you get frustrated, you can always go visit a laboratory where an engineer or scientist will show you hardware, and tell you what they're doing, and if they are on schedule, and let you see some of the research results.

But when you work here, there is no space hardware in the building. So you don't have that kind of release. But what you do have is a much better appreciation of the role that the folks here in the building play. I used to think at a Center that all the work that flowed from here to the Centers was just a pass-through. That's not the case at all. The folks here turn around a lot of work. A lot of the demands we get from [Capitol] Hill, OMB and GAO [General Accounting Office] are worked here at Headquarters.



But I wish there was a way for more Center people to spend some time here, and for people who've only worked at Headquarters to actually go and spend some time working at a Field Center. I think they both would appreciate each other a lot more. I think the route I took by working at Centers first and then coming here has been a tremendous help, because now when we're working on a policy, I actually understand the impact it's going to have when it gets executed at the Centers. So I think that's been good, and a perspective I bring to Headquarters.

WRIGHT: Tell us why you would encourage someone to come to NASA to work.

SCALES: To NASA the agency?

WRIGHT: Yes, the agency.

SCALES: Well, where else can you work where there is a mission like the one we have? Again, I may feel that way because it's the only place I've ever worked. But I don't think that's it. Challenging and exploring the unknown and trying to figure out if we can live in other places other than Earth, and how we get there, the research we do, having a permanent presence in space on the Space Station, to me that should be encouragement enough. But the benefits that goes back into society, I would argue that we play a greater or as great a role as any other agency in all of government. It's simply an exciting place to work. Again I go back to the people that work in this agency. Extremely bright and always willing to help, and take on any challenge.

WRIGHT: Well, I pretty much have concluded my thoughts to share. Is there anything else that you would like to add?

SCALES: First of all, I really appreciate what you're doing here. I'm glad someone actually thought about doing this. Because NASA is a baby compared to a lot of agencies. But what a tremendous achievement for 50 years. I think that should be recorded somewhere for future generations so that they may get interested in trying to figure out how we accomplished so much and who were some of the people that worked there. So I thank you for what you are doing.

WRIGHT: You'll get to be more involved, and they all do something different, and JPL [Jet Propulsion Laboratory, Pasadena, California] going off to Mars, and of course [NASA] Kennedy [Space Center, Florida] where you'll have more and more chance to go down and see the launch of the new vehicles.

SCALES: Yes, and another great aspect of this job is you're sitting around the conference table with the mission directors, and you're talking about things like, "Well there is a dust storm on Mars. The robots, they're in a failsafe mode now waiting for the storm to go, then we're going to send them down in the crater." You talk about that as if it's something right outside the building. We're talking about things on Mars, and how they can reprogram the software and tell them what to do. Where else can you work and have those kinds of discussions?

WRIGHT: I don't know. It's a good thing you're here.

SCALES: Thank you very much.

WRIGHT: Thank you so much.

[End of interview]