NASA JOHNSON SPACE CENTER ORAL HISTORY PROJECT
ORAL HISTORY TRANSCRIPT

KEVIN L. PETERSEN
INTERVIEWED BY REBECCA WRIGHT
LANCASTER, CALIFORNIA – DECEMBER 4, 2007

WRIGHT: Today is December 4th, 2007. We're at the [NASA] Dryden Flight Research Center in Edwards, California, to speak with Center Director Kevin Petersen for the NASA at 50 Oral History Project. Interviewer is Rebecca Wright assisted by 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 sent to the history archives in Washington, DC, where it will be accessed for future projects. Thank you again for providing this time for us and agreeing to talk with us for this project. We'd like to begin by asking you to briefly describe your background and how you came into your current position as Center Director.

PETERSEN: Okay. I've been at NASA Dryden my whole career, which might be a little bit unusual these days. I started out as a co-op [cooperative education] student back 36 years ago. So came out here as a student. When I graduated in 1974 I came on as a permanent employee as a research engineer. My background is in aerospace engineering. My early years were involved with flight research and research engineering here at NASA Dryden.

About the first third of my career was working various aspects of research engineering, primarily involved with the specialties of flight control and flight systems, advanced flight software and hardware for experimental aircraft here at NASA Dryden. Then I went up through

various stages of management, starting out at section level, and the branch level, and moving into some program positions. For the last 14 years now I've been basically in the front office first as Deputy Director, now as Director for the last eight years. So I think my background in research engineering and growing up in this environment really has helped prepare me for the position, and I think at this stage, given that I've been in the job for a number of years now, I am pretty comfortable with the position.

WRIGHT: As you mention, it's a unique opportunity to be at one [NASA] Center all the years of your career. Tell us what has changed over time, how Dryden has changed, but also how NASA in general has changed over the years that you've been involved with the agency.

PETERSEN: Well, I think, in the early years, the Center was focused more on experimental aircraft and aeronautics, and we had some space-related activities too, with the lifting bodies and other vehicles associated with that. Part of it may be because of my awareness of what has changed, given going through various jobs at the Center, but I think Dryden has always had this capability of being on the leading edge of some of the technology for flight. Really as NASA's primary Center for experimental flight and flight test and operations, I think this allows us to have that ability to be able to operate in an environment of experimental test and risks associated with that. So I think the amount of understanding of how to do the risk management for those kinds of activities is a pretty important element.

I think some of the things that changed, I think the Center has migrated from one that was focused primarily on aeronautical and aerospace type tests. Now we're more involved with the science side of NASA. We're operating some airborne science platforms over the last decade

that we didn't have in the early years that I was here in support of NASA's science mission directorate. Just recently we got another program responsibility for the SOFIA program, the Stratospheric Observatory for Infrared Astronomy that also bolsters our mix of programs to include more and more science activities now.

We're also more involved now with the space exploration activity than we've ever been in the past. We have a major responsibility for the launch abort systems tests that are coming up in the next year one of the first major demonstrations for the Constellation program. So I think in contrast to some of the early years where we're probably more and mostly focused on aeronautical technology and flight research, we now have got a more balanced portfolio of work which really supports all of NASA's Mission Directorates. So all four Mission Directorates, we have work in all areas, including of course, as a primary alternate landing site for the Space Shuttle when it's up.

WRIGHT: Dryden's history is so entrenched in the field of aeronautics. What do you feel, in the next 50 years, the level of aeronautics will be as part of what the agency's goals are?

PETERSEN: It's hard to predict what the next 50 years are. You just look back 50 years and things have changed tremendously. I think there'll be more engagement with the integration of aeronautical and aerospace technologies to where 50 years from now routine access to space could easily be a reality, not only for commercial or government, but also for private sector. So that could easily be one of the big changes. I think one of the other big changes that's likely in aeronautics is there'll be a lot more automation and a lot more automated vehicles and a lot of unpiloted vehicles, for example, that'll be mixed in with the piloted vehicles. So the airplanes

and the air traffic that'll be in the system 50 years from now is likely to be a lot different mix of vehicle types than what we're seeing today.

WRIGHT: The information that you just shared with us, how is that part of, or is that part of, your strategic vision that you see that you're putting in place?

PETERSEN: I think, of course our vision is first and foremost to support the agency's direction, which is really to get all Centers involved with the space exploration activity for the future. But I think in addition to that, we look at trying to prepare the Center for the technology, the types of programs that NASA will need, and the nation will need for that matter, for the future. I think that involves, like I mentioned, there'll be less separation between aeronautics and aerospace and science, and it'll be more of an integrated environment I think for the future. So part of our job is to prepare for that mix of responsibilities for the future I think.

WRIGHT: What are the lessons learned that you've acquired through the years that you'll be applying to move the Center into the future?

PETERSEN: As far as the technical lessons learned, I think over the years one of the things that really sits home with me is that there's really no substitute for experience and experienced people. So experience really counts in the business that we're in and how you have to manage the various risks and accept the risks or mitigate the risks. So experience really counts. So when you lose a key talent or key people, it takes some time to replace that experience, and you can be vulnerable during that timeframe, so you have to pay attention.

I think another key lesson is really paying attention to the details, and I think this is probably true across most of NASA. But in the business we're in in the high-tech end of things, there's a real need to make sure that we understand the details to the point to where you can ensure safe and efficient operations, and that things will actually work that you're trying to develop.

I think one of the other things that we've learned over the years is that you have to be wary of the routine operations. We tend to focus most of our attention and most of our efforts on the program or what we're doing for this project or that project to advance the technology, and sometimes what gets left behind is what you have to do in the supporting side, the more routine things, or you think of as being more routine, that are just supporting elements for being able to do that advanced technology work. Sometimes those routine things are the ones that become higher-risk, because you're paying less attention to them. So I think over the years that type of thing can rear its head to where something that you would think would be more of a routine are the things that you might hurt somebody on, versus one of your experimental test activities.

WRIGHT: That's interesting. Budget always makes a difference in what you do and are not able to do. As Dryden begins enjoying a whole new mix of responsibilities, how does budget affect what you currently are doing and what you are planning to do in the future? How are you able as Center Director to balance all of that out with the budget that you have?

PETERSEN: There are always budget fluctuations, and you have to be prepared for the ups and downs of the budget. At Dryden the budget primarily drives our staffing capabilities, in contrast to some of the larger Centers. The bulk of our budget really goes to our civil servants and to our

onsite staffing, versus major big contracts on the outside. So the budget really drives the level of staffing at the Center, and that really drives what our capabilities and capacities are to do work. One of the things we're doing to try to ride through the variations in the budget is one I had already mentioned, which is to try to spread our portfolio work across all the Mission Directorates within NASA, and then if one area, Aeronautics, or if Exploration [Systems] for example has a peak either up or down, the other areas that you have work in can help you ride through that valley for example. So I think that's one thing that we've done probably most recently. I think with Mike [Michael D.] Griffin coming in and really asking every Center to step up to the space exploration side of things, that has helped that. So our portfolio of projects is much more balanced than it has been in the past, and that helps from an overall budget volatility standpoint I think.

WRIGHT: Will Dryden become more involved with the private sector as far as space travel? Is that something you foresee that you'll be involved with?

PETERSEN: I think that's hard to predict. I think when and if NASA chooses to use some of those private space ventures, we want to be involved. For example, there's already some discussion about, from a scientific standpoint, getting involved with some of the early suborbital flights that might occur in some of the private side of things, and actually buying flights or buying time on those activities. So it's certainly reasonable to expect that we would be involved with helping planning that activity and fostering it. So I think if NASA stays as it currently is, there will be a separation between the civil government side and the private side. But I think there'll be more and more utilization of private capabilities where we can, certainly on the space

side as they look at using private transportation back and forth to space in the future. I think that could be true in other areas too.

WRIGHT: You've spent more than three decades with NASA as you mentioned here. What do you believe NASA's most important role is for the nation?

PETERSEN: Well, I think keeping the nation on the cutting edge and being able to stand out as a symbol for the country, I think as a symbol of innovation and excellence, and really something that people can see when they see NASA, they can relate to we're the best in the world in some of these areas. I think people can be proud of that. So I think it's that inspiration and that culture of excellence that not only for those within NASA, and it helps rally people who want to work for NASA, but I think it's also for the general public when they see NASA and they think about some of the things that NASA can do, they can take pride in that from a national standpoint, that this is one of the key things our nation is doing to try to keep the nation in front.

WRIGHT: What kind of impact do you think it's had on society in the past? Like you said, you spent so much of your life here, and yet you're going to spend so much more. What kind of impact do you think it has on the people?

PETERSEN: Well, I think there's certainly a lot of technical impact. Some of the products, you just look into airplanes that we fly every day and the airplanes that you flew out here to visit on. There's a lot of features in those airplanes that were developed and fostered by NASA technology developments. I think there's a lot of that. But it's not real readily visible or

recognizable to the public. But I think certainly the technology side of it across the board, the spin-offs from the space technology areas as well as major features of current modern-day military and commercial airplanes were things that were fostered in NASA experiments decades ago. So there's that piece of it. It's really across the board, not just in aviation, but really in all fields where certain impacts of technology have made life better on a day-to-day basis for people.

I think the other aspect of it is that, I think NASA has a real role and an opportunity in the next generation of people in really working with the students and the education side of it. People pay attention when they see NASA is behind something, and I think you can really turn the heads and maybe the turn the lives of some of the younger people through some of the education and outreach activities. I think that's an important aspect that NASA should continue.

WRIGHT: Why would you encourage someone to start a career with NASA and stay with it?

PETERSEN: Well, I think you just look at what's in NASA's future, going back to the Moon, going on to Mars, working on some of these things that you can only dream of right now. I think that's a source of inspiration for young people to get into some of the fields that are required to be able to work on things like that. So, even if you reach one in 100, that student might see something that day that gets them thinking that I want to go work on that and gives them some dreams for the future.

WRIGHT: Are there other areas of programs or ideas that if you had the budget you'd like to add here at Dryden?

PETERSEN: Well, I think one of the strengths of Dryden is the fact that we're one of the smallest Centers. That's both a strength and a weakness in a certain sense. The fact that we're small allows us to be quite agile on moving from one activity to another and to actually provide an environment for employees that allows them to work on the entire aspect of a project, not just one little piece of one little specialty. So I think the fact that we're an end item organization to where we actually have to operate machines and vehicles that other people may have invented or dreamed up and try to make them work is a real inspiration for the folks that work here. So I think that aspect of it makes Dryden a little bit different than some of the other Centers, in that we tend to have one primary mission, which is atmospheric flight research and test, whereas other Centers might have many different focused missions. So it allows us to I think specialize a little bit more, but in that specialty it also allows people to have great breadth and responsibility for some of the activities that go on.

WRIGHT: I guess I could close the session by asking you how has your role changed since you took on the role and responsibilities of Center Director? How has your role changed, and how do you see it even changing in the future?

PETERSEN: Well, I think the more you get involved with some of the senior management, you get a little bit more of an understanding on how things work and migrate. My role I think for the Center is one of trying to provide direction and leadership into the direction in the programmatic activities that we're working on and trying to foster that future work to make sure that three years from now or five years from now that we have a healthy Center and an environment that people

will want to work in like they want to work in today. I think the agency changes as administrations change and as Administrators change. I think the way Mike Griffin operates is clearly different than how Sean O'Keefe operated and clearly different than how Dan [Daniel S.] Goldin operated. So each Administrator brings their imprint on how people want to operate. I think all the Centers and the employees have to adapt to a certain extent to different directions and focuses and where they want to steer both the technical side as well as the institutional side or the Center and the Center management side of things.

WRIGHT: Are there any other thoughts that you'd like to share as you look behind and look ahead as far as the agency is concerned?

PETERSEN: Well, I think just from the standpoint of having had an entire career, from being a student through the position that I'm in, I think it's been quite a ride and quite an opportunity, that I would certainly hope that others that follow would have the same kinds of opportunities that I've had over the years to move from technical responsibilities and developing a certain technical expertise to being able to manage and lead people and manage and lead projects and now manage and lead collections of projects and people. I think it's been quite an opportunity for me, and hard for me to imagine how it might be better than working at a place like this.

WRIGHT: Well, we wish you the best. Good luck with all the projects here. Thank you.

PETERSEN: Okay. Thank you very much.

[End of interview]