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ORAL HISTORY 3 TRANSCRIPT

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INTERVIEWED BY REBECCA WRIGHT
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WRIGHT: Today is November 19th, 2003. This oral history with Courtney Stadd is being conducted for the NASA Headquarters History Office, Administrators Oral History Project. The interviewer is Rebecca Wright, assisted by Sandra Johnson.

This oral history with Mr. Stadd began in January 2003, and focused on his involvement in the commercialization of space in both the commercial and government sectors, ranging from the mid-1970s until 1972, when he left NASA to return to private business. During those sessions and earlier this year, he was the Chief of Staff for NASA. Today we find him in his office in Chevy Chase, Maryland, where he once again is working on the commercial side.

Thank you for finding time to continue this oral history. As we spoke earlier, so much has happened since the last time that we've met, including, again, your departure from NASA, but probably the most significant event affecting the agency and so many people within the agency during the past ten months has been the loss of the STS-107 crew and the Orbiter, *Columbia.*

So we'd like to start today with remembering February 1st, 2003, and if you'll share with us where you were that morning when you heard the news.

STADD: That morning I was getting ready to come into NASA Headquarters [Washington, D.C.] to work with the Administrator [Sean O'Keefe] on a rehearsal for the release of the NASA budget that coming Monday, and I got word from Bill [William F.] Readdy, the Associate

Administrator for Space Flight, who was with the Administrator down at the Cape [Canaveral, Florida] awaiting the landing of the STS-107. I got word from him at roughly 9:20 A.M. that it appeared that the Shuttle was a total loss and the crew had died. At that point, I scrambled to get to the office as quickly as possible to support the Contingency Action Team that had been set up.

WRIGHT: Can you walk us through those first few hours at NASA Headquarters and what your involvement was in helping to do whatever had to be done at that point in time?

STADD: Actually, my involvement started within minutes, within seconds of the call from Bill Readdy. We have a contingency plan that has been in operation ever since *Challenger*, and each of us in the front office has a role in terms of crisis management. My first role, vis-à-vis that plan, was to call the White House, and so I scrambled to get in touch with the National Security Advisor [Condoleezza Rice] and her team, with the Cabinet Affairs Office, and inform them of the loss of the [*Columbia*].

As I was driving to work, I was fumbling with my list of phone numbers and my cell phone, and I recall trying to flag down a police officer, because I was concerned about my ability—I was actually concerned about being impeded by some traffic that morning and by traffic lights, and I was trying to get some escort to help me get to the Headquarters as soon as possible. But as the cliché goes, when you want a policeman, they're not around. So I made my way as quickly as I could.

But meanwhile, I was multitasking and did get in touch with one of the senior representatives for Dr. Rice, the President's National Security Advisor. She was with the President [George W. Bush] at Camp David [Maryland], if memory serves, and her aide got on

the phone with me. He requested phone numbers for Administrator O'Keefe. The President was interested in, obviously, getting updated by the Administrator.

I believe that Sean was also contacting the President through other means. Then I gave them the information where I could be contacted on a 24/7 basis.

They also had the contingency plan, but in these situations, you know, you're operating in a crisis mode real time, and so I was making sure that I knew how to get to them and they knew how to get to me.

I arrived at Headquarters about ten o'clock, if memory serves, and when I came into the garage, there were other people beginning to converge. It's a blur now, but I remember running into the lobby and running up to the ninth floor, where I was informed that we had already established the Contingency Action Team on the seventh floor, and I scrambled down to that office, where I found Fred [Frederick D.] Gregory, our Deputy Administrator, and the other members of the team already at their workstations getting updated from the [relevant Space Flight] Centers. I remember thinking, when I walked into the room, watching Fred on the phone that no human being should ever have to live through this type of disaster, these [Columbia] astronauts were friends [and dear colleagues of] Fred and the other people on that Contingency Action Team [making the loss ever more profound].

Fred was the CapCom [Capsule Communicator] on *Challenger*, and my point is that, one tragedy is too much, and I thought, as I walked in, how unfortunate that Fred Gregory and some of the other veterans have to live through this horror once again. But I also realized immediately why Fred had such an extraordinary record as a commander of previous Shuttle flights, had flown successfully 550 combat missions in Vietnam, mostly in helicopters. He was a sea of

calm, of extraordinary professionalism. And by the way, everyone in that room exemplified the best in terms of professionalism.

WRIGHT: At what point that day did you have an opportunity to talk to Administrator O'Keefe?

STADD: Not until late that afternoon. Obviously, all of us watched Sean when he came out for the first press conference and confirmed the worst, the total loss of the crew and Shuttle. In fact, that image of us watching Sean has been memorialized in a picture in *Time* magazine that appeared that week. Recently, when I was going through some material, I looked at that picture once again, and you could see on everybody's faces just the utter tragedy that this disaster represented for everyone.

I saw Sean when he arrived [later] that afternoon and the senior staff was gathered into ACR-1, the conference room that adjoins the Administrator's suite, and we immediately got down to business in terms of understanding what the issues were and dealing with [all aspects of the] recovery operation, with Sean assuring that priority number one was the proper and dignified recovery of the [human] remains. That was number one, ensuring that the families and their concerns and their sensitivities were treated as our [top] priority. Then, obviously, [we were focused on] ensuring that the recovery of the forensics operations associated with the loss of the Orbiter were going as effectively as possible. And we had constant updates. We met every couple of hours through the late hours and that went on for days.

By chance, that day I was wearing a pedometer, which is a little meter that measures your distance as a walker [or jogger]. It was the first time I actually was wearing it. That morning I was hoping to do a little bit of a jog before I went into the office. And I guess it must have been

about midnight or so, I looked at it and I had clocked about six and a half miles between the ninth floor and the seventh floor, running back and forth so many times to ensure that everyone's needs on the Contingency Action Team were being properly addressed. I wouldn't wish that experience [of dealing with this terrible tragedy]—I know I speak for every single person in the agency—I wouldn't wish that on anyone.

One thing I do tell people about the experience is that it's almost as if the very physics of time and space change in a traumatic environment like that. Decisions that sometimes might have taken days, weeks to make are made literally in minutes. Conversations that might be dragged out with your colleagues, you end up speaking very succinctly and very much to the point, and you end up having to multitask because you're being bombarded by all sorts of events simultaneously. But as I say, everyone, without exception, stood up to the challenge.

I want to also tell you that the whole concept of a federal family really came to the fore. I used to refer to it, before the *Columbia* accident, in speeches, but I really felt it and all of us felt it literally in the hours [and days] after the disaster was confirmed. Agencies stepped up, in many cases without us asking them, to offer support. The Office of Personnel Management [OPM], under the directorship of Kay Coles James, literally within, it seemed minutes, but I'm sure it was maybe a couple of hours after confirmation of the disaster, was offering to provide benefits, offering to provide all sorts of support. And the same went for FEMA [Federal Emergency Management Agency] and other agencies [such as] the FAA [Federal Aviation Administration].

Among my other priority jobs, per the Administrator's request, which was relayed to me by Paul [G.] Pastorek [NASA Chief Counsel], who was also with the Administrator and Bill Readdy, waiting for the landing of [STS-] 107, Paul Pastorek said the Administrator was going

to stand up an investigation committee, and wanted to have the chairman and the members both identified, sworn in, and available to begin the work within twenty-four hours. Part of my job was to try to locate some of the candidates that the Administrator wanted to talk to, starting first and foremost [with who was going to be the designated] chairman, as well as I had to track down some of the other recommended members. Then I had to work directly with the Office of Personnel Management to put the paperwork in place to have these people sworn in [as soon as possible]. OPM people came in at one or two o'clock in the morning [to their offices to complete the necessary documents and ensure that the first group of Committee members, including Admiral Gehman who was named chairman by the Administrator, could be sworn in on] Sunday to begin work on the investigation. That's a very small example of the type of stepping up to the plate and doing what was ever required. And so it went, as I say, with other agencies as well.

WRIGHT: Those first few days, I would have to imagine they were so much of a blur and yet so much got accomplished. At what point do you feel that there was a definite plan implemented? Was it from the very beginning, on how these steps would be taken?

STADD: NASA is world renowned for its contingency planning, so I have no doubt that there are contingency plans going back to Alan [B.] Shepard's flight, and after [the] *Challenger* [disaster], as you might expect, we had pretty involved and pretty detailed contingency plans. So literally within minutes of confirmation of the loss of 107, those contingency steps were set in motion. We had a plan, we had a road map, we had a baseline that shaped and drove our actions immediately thereafter. In addition to the notifications to the appropriate administration officials

and other agencies, obviously there was a very involved engineering contingency plan that was immediately executed, starting first and foremost with mission control locking down all the telemetry and ensuring that everybody at the workstation had preserved and protected the relevant data. I think that that demonstrated the utility of the plan and the utility of our having constantly rehearsed it.

In fact, just the previous month or two, or couple of months prior to the accident, there had been a rehearsal, not involving the front office, but involving many of the people in the Operational Engineering Directorates who had gone through a rehearsal involving the contingency plan, and that was something that was done on a fairly regular basis. [Unfortunately, the Columbia tragedy on] February 1st proved the merits of people being at the top of their game in terms of implementing that plan.

WRIGHT: What were your next tasks after those first few days? Of course, the recovery efforts started from the very beginning, as you mentioned, with the number one priority of the dignified recovery of the human remains as well as the pieces of the Shuttle. Can you tell us about your involvement in that and how that progressed?

STADD: A lot of what I was involved with had to do with ensuring that people in the agency were getting the type of support and assistance they needed from the front office. So, first and foremost, my job was to make myself available to everybody to call, day or night, come visit, with whatever issue, whatever need they had, and be sure that if I could handle it at my level, terrific; if I needed to bring it up to the Administrator or Deputy Administrator level, I would do that, and that went on constantly.

Secondly, I was constantly involved in helping resolve potential conflicts or issues that needed clarification between the agencies. I do want to stress that the coordination amongst these many, many agencies—there were many at the federal, state, local level—went amazingly well, but given the complexity of the recovery effort, one of the most complex in U.S. history, as you might imagine, there were occasional jurisdictional problems. For example, [we had] to figure out who would pay for the recovery operation, I was involved in the first few days of talking to my counterpart at FEMA to ensure that we understood where NASA's obligations began and ended and where FEMA's began and ended, and so it went with some other agencies as well. In every instance, we arrived very quickly at a resolution and moved forward.

So part of my job was to ensure that any potential problems were identified, trapped, fixed, and we moved on. And as I mentioned at the beginning of this conversation, it was very interesting to see how certain problems that in an interagency context normally might have taken weeks, were resolved sometimes within minutes, sometimes within a few hours; all of that a function of the desire of our colleagues in the government to ensure that the priority of recovering the remains, of assuring that the operation went as smoothly as possible, as quickly as possible, was carried out as effectively as possible.

I accompanied the Administrator on some visits early on down to Lufkin [Texas], where we had sort of the key operations center, and I visited the military base where the preliminary collection of the 107 remains were beginning to be catalogued and prepared for delivery to the Kennedy Space Center for more detailed forensics investigation. I also was very much involved in working with the people at Johnson Space Center in terms of the memorial service that was conducted at the Johnson Space Center the following Tuesday.

I want to take a moment to give special tribute to the Director of Johnson Space Center, Jefferson Davis Howell, and to my former Deputy Chief of Staff, who is currently a senior official at Johnson Space Center, who works closely with Jefferson Howell, Sue [Susan H.] Garman. She and her team at Johnson Space Center pulled off a real miracle. Literally within seventy-two hours, they were able to organize the memorial service with the President of the United States.

Keeping in mind that all of us were emotionally affected by the loss of 107, the people at Johnson Space Center were particularly hit hard. After all, these were neighbors, these were friends, these were colleagues of long standing, so Sue Garman and her colleagues, in the context of profound mourning, had to go to work and pull off, by anybody's standard, [what] was a world-class event on that following Tuesday. Of course, I stayed in very close contact with Sue and her colleagues in coordinating the arrival of the President, keeping in mind that my other job was White House liaison.

Interesting anecdote. The night before the memorial service, I got a call from the head of Cabinet Affairs on behalf of the President. The President was interested in inviting Neil [A.] Armstrong to accompany him on Air Force One. When I got the request, it was roughly about five or six o'clock. Neil Armstrong is well known for his privacy, so contacting Armstrong is a nontrivial task, even on behalf of the President of the United States. It took some doing to obtain his private contact information, but I went to one of the astronauts from his generation, Gene [Eugene A.] Cernan, and Gene Cernan's wife was very helpful in contacting Armstrong. I recall I couldn't reach Gene. He was in transit somewhere, so I called Mrs. [Jan Nanna] Cernan, and when I made the request, there was a bit of silence on the phone and she said, "You know,

Armstrong does protect his privacy, but," she said, "since this is a request from the President, and given the extraordinary occasion we're talking about," she said, "let me see what I can do."

We hung up at that point, and a moment or two later I was sitting with the Administrator, discussing the *Columbia* situation as well as the upcoming memorial event and other issues, and roughly maybe forty-five minutes after that conversation, maybe a little longer, the Administrator's assistant came into the office and informed me that Neil Armstrong was holding on the phone for me. I went out, I picked up the phone. He could not have been more gracious when I explained the reason for the call. Without missing a beat, he said, "Absolutely." He said, "I will do whatever is necessary to attend the service."

He asked if he could bring his wife. I said, "Of course." It turned out that logistically, getting him from Ohio, where he lives, to Andrews Air Force Base [Maryland] to accompany the President on Air Force One, was next to impossible, given the [lateness of the] hour. So I asked Armstrong if he wouldn't mind if I contacted the White House to see if we could work an alternative transportation strategy. I then called the White House Cabinet Affairs [Office and] they put me in touch with National Security Council. To make a long story short, an aircraft was made available for Armstrong and he did accompany the President as he walked to the dais at the memorial service [at the Johnson Space Center]. That was really an example of the type of logistical challenges that I got, although trying to reach [the legendary Neil] Armstrong [stands out as a pretty memorable challenge].

WRIGHT: Those first couple of weeks there were a number of memorial services and events. You attended many of those.

STADD: I did.

WRIGHT: Could you share with us those times?

STADD: I did, and I know I speak for everyone, starting with the Administrator, that I hope never to witness another Missing Man Formation. They are emotionally trying enough, but to witness seven of them, or close to seven of them was really quite traumatic. I really am awed by the Administrator's stamina in attending all the funerals, all the memorial services. I went to just about every one of them, with the exception of a couple, when my job required me to handle some things in his absence as he was attending the other services. One of the more poignant—and they all were poignant, they all were emotionally [tough]. At the same time, they also were a tremendous catharsis. I want to also give tribute to Arlington [National] Cemetery [Arlington, Virginia], the wonderful public servants at the cemetery who managed to carry off these services under extraordinary circumstances with the utmost dignity and the utmost sensitivity to the families. Knowing that they unfortunately do this, of course, in the midst of the Iraq war on an all-too-often basis is quite a remarkable tribute.

Among the other poignant memories that I have was in Lufkin, Texas, attending a memorial service at the local church, and sitting near the front, there was a large picture of the 107 crew. There was a church choir. Sitting behind me were many of the astronauts who were actively involved in the recovery. And what stands out were America's heroes and heroines sitting behind me crying, and that made it particularly tough to know that some of the bravest people that we have to offer the country were sitting there, and knowing that they were showing their human vulnerability and that they had lost friends and colleagues.

The town of Lufkin could not have been more hospitable, more generous, or opening of their hearts to NASA and the other agencies that were involved in the recovery effort. There are innumerable examples of the East Texas people opening up their houses. There were [countless] examples of citizens, both in Texas, Louisiana, and other parts of the country, but particularly in Texas, who, unprompted, would stand guard over a piece of Shuttle debris in their backyard until the appropriate authorities showed up. There was very little—there was some, but there was very little pilfering. Ninety-nine percent of the population, 99.9 percent were exactly what you would hope for from your fellow citizens in terms of generosity and [helping to support this huge and complex recovery effort].

The other poignant memory that comes immediately to mind [is that] I was given the honor of accompanying Colonel Ilan Ramon's remains to Israel. I went with Steve [Steven G.] MacLean, Scott [E.] Parazynski, and several of the other astronauts who were very close to Colonel Ramon and the family, and I represented the agency in transferring officially the remains to Prime Minister [Ariel] Sharon in that memorial service, and then also was part of the group that attended the funeral service. They, too, have a Missing Man Formation, which was incredibly [emotional]. They played over the loudspeaker system a soundtrack that one of the astronaut's had edited, that had the music that Colonel Ramon had chosen to be awakened by mission control. As you know, each of the astronauts are able to choose their special music that they would prefer to be awakened by in the morning, or whenever their sleep cycle was scheduled, and they played the music for Colonel Ramon and you also heard his voice. You'd have to be made out of stone at that point not to emotionally respond to that.

Steve MacLean represented the astronauts, the agency, in his eulogy and provided a very compelling, a very eloquent eulogy regarding Colonel Ramon. I was struck by the strength of Mrs. [Rona] Ramon; frankly, struck by the strength of all the families.

If I may, I'd like to provide one anecdote about the families and about the President. At the Houston memorial, when the President had a private moment with the families, he offered to meet with them when they were in Washington [D.C.]. This was more than simply a glib offer by the President. One of the things that I appreciated in serving this President is that he cares deeply about people and doing right by people, particularly in these sorts of circumstances.

Well, a few weeks after that offer, I became aware that all the families would be in town for the burial of one of the astronauts, and I had about twenty-four hours between that funeral service Friday afternoon and the departure of a couple of the families Saturday, to see whether the President might be available to meet with all the families. So I called the White House. I said, "I realize this is short notice; I realize that we're dealing with the logistics demands of the Commander-in-Chief, but here's an opportunity for the President to fulfill his offer to the families and meet with all of them."

The people I spoke to said, "Let us get back to you." They did shortly thereafter, and we arranged for all the families to come to the White House. The meeting was scheduled for roughly thirty minutes. If memory serves, I think the families were with the President for about two, two and a half hours. The First Lady [Laura Bush] was there [as well].

There are strict limitations on the size of the group that normally is allowed into the Oval Office. I suggested that the families very much would want to be accompanied by those astronauts that were assigned to the families and had been with them from the beginning of this tragedy, and the White House, without skipping a beat, said, "Absolutely." [This visit] turned

out, I think, [into] one of the largest gatherings [that] ever took place, [in the Oval office] because [so many] other people also were allowed in from the NASA family to accompany the families.

The President opened up the doors to the South Lawn and he allowed the kids to enjoy the South Lawn. He brought in his dog, Barney; they played with Barney. And for about twenty, twenty-five minutes, he literally signed anything that the kids gave him. And at some point, the White House staff allowed the President the opportunity to gracefully exit by telling him, "Mr. President, it is now time for the tour."

And the President said, "I know this White House. I can give the tour as good as anybody," and he led them on a tour from the West to the East Wing. Anytime any of the family members showed any sense of depression or being low, he or the First Lady would sweep in and hold their hand and console them. By the end of that visit, families were in as good a spirit as you could imagine, given the fact they'd just buried one of the astronauts a few hours prior.

[For me, the] interesting thing about that visit [was the total absence of the] media. The President did this for the families, and, to me, that was an example of a real class act. That stands out as one of the more interesting anecdotes for me about the type of support that the families got from the President. But I also want to say [something about] the support the families also gave the President and the NASA Administrator and the rest of us. The President was very much struck by the strength of the families when he first met them and talked to them the day of the accident and at the memorial service [at JSC]. The White House staff told me that the President, in the days following his encounter with the families, relayed to other people that he met, how impressed he was with the strength of the families.

On the day of the accident when [the families spoke] with the President, they said, if I could paraphrase, "Find the problem, fix it, but you must continue exploration. [The] only way to honor the legacy for [our] loved ones is to ensure that the agency continues on with the exploration that our wives, our husbands had pursued their lives for."

WRIGHT: Has there been discussion between you [and the families], since you're the liaison to the White House, regarding this request that they had made of the President? Has there been a lot of discussion about what can be done? And the White House offering or giving information to get NASA back to flight?

STADD: Administrator O'Keefe recognized that assuring that the families were kept informed was paramount. Obviously, the families are the ones to ask whether they feel that we fulfilled that expectation or not. But I do know the Administrator made it a priority for him personally and for all of us on the senior staff to make sure they were properly coordinated with. I do know the White House was very sensitive in ensuring that any information regarding the investigation was properly vetted with the families and their guardians to assure that they were at no time put in an awkward position in terms of information being released to the public.

Shortly after the accident, sometime in February, I was directed by the Administrator to stand up a Tiger Team called the *Columbia's* Families First, and it was my job to populate the *Columbia's* Families First team with the appropriate people from Legal, from our Budget Office, from the Astronaut Office and so forth to ensure several things; one, that the front office at Headquarters was effectively lashed up with the Astronaut Office at Johnson Space Center to ensure that all the needs of the families were properly met. My mandate was to ensure that there

was no "air gap" between the family needs, the astronaut needs, and what Headquarters could provide.

The second direction I was given was to ensure that no stone was left unturned in terms of ensuring that all the benefits that were deserved by this crew came their way, both in terms of compensation and in terms of recognition in the form of medals and so forth, as well as to ensure that in terms of the memorial services and so forth, that all the logistical needs were met.

If memory serves, I think this [group] was stood up within a week or so of the accident. I have to give tribute to people like Sue Garman, to Andy [Andrew S.] Thomas, who was the liaison between the Astronaut Office and all the CACOs [Contingency Action Controls Officer]—the astronaut—the guardians, as I call them, for the families. Bob [Robert D.] Cabana, the wonderful head of the Astronaut Office, and the Center Director, Jefferson Howell; "Beak," as he prefers to be called. Our general counsel, Paul Pastorek, and Bernie [Bernard] Roan, who is the newly appointed chief counsel at Johnson Space Center, but at the time of the accident was on the legal staff at NASA Headquarters, played really a critical role in helping us address the legal issues.

Gwen [Gwendolyn] Brown, who was recently confirmed as the Chief Financial Officer, at that time was the Deputy Chief Financial Officer, played a real critical role in helping to ensure that all the financial-related issues were properly supported. I'm sure I'm forgetting [other key] people, but [others who come to mind include] Vicki [A.] Novak from HR [Human Resources] and her wonderful team, people from External Relations to help us [provide] liaison with the Pentagon, were all assembled and we met every day, often with the Johnson Space Center people on a telecon [teleconference].

When we first stood up the team, I sensed, and later on, months later, in conversations with some of the people at Johnson Space Center confirmed, that [they initially viewed this] team at Headquarters [with some skepticism]. The concern was that Headquarters would be an impediment—an additional layer of decision-making that was extraneous and unneeded. I made every effort to ensure that we weren't perceived as a "boarding party," that we were perceived from the first minute on as a partner, as a facilitator. One of the artifacts that I treasure on my office wall is from the Astronaut Office, which was a gift at my farewell, their way of thanking me for the support that the team provided the Astronaut Office, and I accepted that with great pride on behalf of an exceptional team that I was honored to work with.

We worked on everything from making sure that airplanes and vans and buses were immediately at the disposal of the astronauts and the families in terms of memorial and funeral services. We worked on issues regarding compensation. We worked on issues regarding medals. I was very pleased that the Administrator wanted to ensure that there was symmetry with the *Challenger* astronauts, but there were some medals that the *Columbia* astronauts were [uniquely qualified to receive]. I understand that since my departure [the group has] been continuing my efforts to ensure that the [Challenger] crew was properly recognized as well.

It's no slight regarding our colleagues at NASA during the *Challenger* episode [that they perhaps had missed an opportunity to recognize the Challenger crew with certain categories of medals]. That previous tragedy actually gave us a frame of reference and allowed us to [benefit from] some lessons learned, such as ensuring that there were certain medals and certain recognitions that our colleagues probably weren't, understandably [aware could be provided] for the crew.

One of my [other] priorities was to stand up an assistance fund that would allow all the employees at NASA and the contractors to contribute to a fund for the families, to ensure that the education for the children were taken care of, and whatever other appropriate needs could be addressed through contributions by the NASA family and the extended family through our contractors.

I remember that originally we were focusing on a fund that would be set up exclusively to help the astronauts and their families. As we were deliberating on that proposal, the Administrator called for an off-site [meeting] with our senior managers to address a number of topics. One of the topics had to do with the Family Assistance Fund, and when Gwen Brown, who had primary responsibility for helping set up that fund as part of my team, when she notified the senior managers that we were focusing [exclusively] on the astronauts, Dr. Shannon [W.] Lucid, former astronaut and our chief scientist at the time, in typical generous fashion—one of the great pleasures of my tenure at NASA was meeting Dr. Lucid. She's one of the great class acts. By the way, she's well loved by the astronauts for many, many reasons, one of them being that, as a grandmother, she has a little bit more flexibility and she is known for volunteering to do the graveyard shifts in mission control. But that's only one of many reasons why she's really treasured by her colleagues.

Anyway, when she heard that we were focusing on the astronauts, both she and former astronaut Bryan [D.] O'Connor objected. They felt strongly that the astronauts should not be treated as an elite, isolated group; that astronauts recognize that the success of their missions are fundamentally based on the [support of the entire] NASA family. So it was really through their arguments that the Administrator agreed that we should broaden the scope and ensure that the Family Assistance Fund covered everyone in the NASA [community], and sure enough, today

we have a fund that any individual can contribute to, and that means any member of the public can contribute to, and it benefits any NASA person who loses their life in the pursuit of a NASA-related mission.

WRIGHT: That's interesting. There have been a number of ideas proposed for memorials. Have you been involved in researching those?

STADD: Our *Columbia* Families First team was very much involved in helping to vet some of the [preliminary] ideas. The Administrator made it quite clear that the families would be the ultimate decision makers, so we played the role of facilitating between Arlington Cemetery, which, of course, is where one of the memorials will be placed. There are other venues in Texas and elsewhere that are under consideration. But we got involved to the extent that we ensured that the ideas and concepts were provided to Johnson Space Center, who, in turn, ensured that the families were given the information and could make decisions accordingly.

Before I left in July 2003, my sense was that the families were closing in pretty quickly on a memorial design at Arlington Cemetery, but decisions as to placement and design for memorials in these other locations along the debris trail were still under consideration, and since leaving the agency, I, frankly, don't know where things stand.

WRIGHT: The recovery efforts for the *Columbia* lasted to the first part of May and during that entire period, from February through May, these agencies, federal, state, local agencies, continued to work closely together to accomplish as much as they could. What was your continual involvement with that part of the recovery process?

STADD: Really, after the first several weeks, month or so, much of the liaisoning with the community of federal, state, local agencies migrated elsewhere. Dave [David A.] King, who's the current Director of the Marshall Space [Flight] Center [Huntsville, Alabama], was one of the key NASA liaisons early on in the process. And I should tell you that people like Dave King and others from Johnson Space Center, Kennedy Space Center, Marshall, were in the field, very much [involved in shaping and] leading the recovery effort. At Headquarters, we were in the mode of trying to assist people like Dave King with resource needs, logistical needs; [for example], if they needed airplanes, if they needed additional personnel. But the vast bulk of the hard and sometimes very dirty work was done [from the initial] hours [after the accident], by people like Dave King.

I also want to give credit to part of the agency that for whatever reason tends to not get the appropriate credit, and that is our Office of Security, our Code X at Headquarters, led by the very able Dave [David A.] Saleeba. I was on the team that hired Dave Saleeba, during my first year at the agency, in 2001. He's a former Secret Service agent, brings a wealth of experience in the security realm to this job. It's the first office set up at the agency dedicated exclusively to security. His people, within a very few hours of the accident, were activated and were out in the field, helping to recover remains, and played a really critical role in coordinating with the local law enforcement officials. Our NASA IG, Inspector General [Robert W. Cobb], and his people also played a very commendable role, a very important role as well.

But for whatever reason, I find that people tend to overlook the role of Code X. I think it's because, starting with Dave Saleeba, Dave doesn't look for attention; he simply does the job. And if I've done nothing else in this oral history, I want to ensure that certain people, such as

Dave Saleeba, get appropriate attention. He and his people did a remarkable job. At some point, we may talk about 9/11 [September 11, 2001], but I will tell you at this point in the interview that I was very grateful to have someone of Dave Saleeba's caliber as we dealt with the aftermath of 9/11.

WRIGHT: One other question I have on *Columbia* before we move on. Almost immediately, President Bush named FEMA as the lead agency, and it was right during the time [the Department of] Homeland Security was starting to take some form. Did NASA at any point in time have a concern of turning over or working with a new office and one that wasn't quite where it needed to be?

STADD: To the contrary. We were very grateful for the FEMA people, who are experts at both human disaster and natural disasters, so we welcomed, with open arms, their expertise. And of course, their budget is also structured to deal with unexpected disasters, so the working relationship with FEMA from the get-go was quite good. We did have some issues of clarification, but those were very, very quickly resolved, and you could not ask for people who, at all levels of the command chain at FEMA, who [could be more] cooperative, very professional, and, frankly, brought a tremendous amount of value added to the recovery effort.

WRIGHT: Before *Columbia*, one of the major projects that you were working on was the Freedom to Manage Task Force.

STADD: May I make one point about the recovery effort?

WRIGHT: Please.

STADD: When I did [accompany] the Administrator [to] the operations center at Lufkin, [we] went into the civic auditorium, which is normally used for exhibitions and Chamber of Commerce-related events. As an example of the generosity of the town, [in the hours after the Columbia tragedy], they immediately opened up the civic auditorium, disrupted, preempted whatever other plans they had, to allow this multitude [of various agency officials], almost the equivalent of the cast of *Ben Hur,* to suddenly show up at their doorstep. Remember, this is a small East Texas town that had to accommodate an extraordinary number of people.

I'll never forget one of our NASA colleagues, Dr. Bruce Davis [Stennis Space Center], who's an expert in remote sensing, who brought his expertise and that of other NASA people in the geospatial realm, to [use geospatial] maps [to] help the recovery experts identify where the debris was located. [He told] me that when he showed up [at this center], the first day after the accident, and the [technicians] were wiring the different workstations [so rapidly], [that at] one point, the NASA workstation and the other workstations were wired into the world, vis-à-vis the Internet, [but] they didn't have [a simple] telephone linkup to [allow them to] communicate with their neighbor [who] was a [mere] few feet away. That always stood out for me as a very compelling example of the speed with which this recovery effort was stood up.

It was a remarkable sight to go in and see T-shirts and windbreakers with an unbelievable range of agency names, from the FBI [Federal Bureau of Investigation] to people from the Department of Interior, to NASA, to DoD [Department of Defense], local police agencies, and to [witness] the spirit of cooperation. [It] was [really] remarkable.

One of the astronauts told me about one of the unsung heroes—a [local] Christian group [composed mostly of teens]. As extraordinarily helpful as the wildlife agencies were in tracking and identifying the debris (the foliage and the landscape in East Texas is very tough going, full of snakes and a very tough area to navigate your way through in terms of trees and bushes), it turned out that members of this Christian [teen] group were quite adept at navigating through the underbrush and the forest because of their fishing and their hunting.

[For example, this same] astronauts told me [a story about how] it was getting very dark [one late afternoon early in the recovery process] and a piece of Shuttle debris was identified. Like many of the sightings, no one really knew if it was real debris or a false read. As the sun was setting, the astronaut said to one of these teenagers, "I think we'd better wait until the morning."

The teenager said, "Come with me. I'll take you." And as the sun was quickly setting, they got to the edge of this quite daunting forest, and he said the young man took him into the forest—at that point it was total darkness—and was able to somehow locate the debris. It turned out to be a false read, but [the young man] was able to find [his] way back [safely] to their car. He said that [sort of courage and commitment to getting the job done] went on constantly.

I know that the Administrator and others from Headquarters who visited with the recovery crews were just mesmerized by the fact that, literally, no matter how miserable the weather conditions, and [it] got really very, very bad in terms of rain, swamplike conditions, none of that kept the recovery crew from recovering as much as they could of the remains and the debris. May there never be another comparable recovery effort, but if there is, I have no doubt that this will stand as a benchmark.

WRIGHT: Are there any other thoughts or aspects of those months that were so focused on *Columbia* that you'd like to offer before we do move on?

STADD: Well, it reinforces the fact that in this very dangerous business of launching human beings into space, a premium that has to be placed on contingency planning, on lessons learned. You can never do enough rehearsal to plan for such a disaster. I think that, if anything, it also demonstrated that people really do rise to the occasion when called on, which gave me a renewed sense of confidence and faith in the people that make up the NASA community.

My hope is that the Office of the Administrator will continue to stay engaged with the contingency planning and the [disaster] rehearsal [process], because there is a tendency over time for people to get a little bit more relaxed. I think Admiral [Harold W.] Gehman very effectively brought that in his report, [*The Columbia Accident Investigation Board Report*].

So if I have any caution for my former colleagues at Headquarters, particularly in the front office, it is to assure that your eye is never taken off that ball. I don't believe that will be the case with the current individuals who went through this experience, but I certainly hope that future front offices pay very particular attention to this experience and assure that they continue to give the people associated with the Space Station and Space Shuttle Programs the appropriate support so that [in the event a] disasters happens again, that we're properly prepared.

WRIGHT: What did you find to be the most challenging part of this whole ordeal for you?

STADD: I speak for just about everybody involved with this [when I say that] it's really having the stamina to deal with all the incoming information in this crisis mode. I think that that

probably was the toughest part of it, staying on top of your game, making sure that you were representing the Administrator, the agency, the President, as effectively as possible, that you didn't let anything fall between the cracks, because the consequences were pretty profound if you did. In your normal course of events, occasionally if you allow something to slip between the cracks, you can make up for it, but in this instance, you had to make sure your decisions were properly implemented and that you were making good judgment calls the first time, every time. [Especially] in my job as Chief of Staff, [I needed to] ensure that everyone was getting the level of support that they required.

You know, in these circumstances, you can constantly second-guess yourself. In my case, I probably would like a bit more time to pass between that trauma and thinking about what we might have done better. I know that there are people who are appropriately reviewing the overall response and ensuring that we [effectively understood and implemented all the] lessons learned. But, if I had one thing I would do differently, I probably would have set up, within hours, a Crisis Management Team, just within the front office, and do it with just a couple of people.

We eventually did set up such a team with a couple of people, involving people like Steve [Steven C.] Miley, who's now in the Office of Space Flight. One had to be careful in setting that up because you didn't want to do anything that added an additional bureaucratic layer that contributed to inefficiency. But I must say that overall I think things actually, in retrospect, went amazingly well, and I think, overall, I can't really think of any major thing that I would have done differently.

Another thing that I was involved in that I should add—and I have to be careful; this does involve some classified information—but it is well known that the agency had a relationship with

a defense agency that was involved with activities that could help us, when need be, image our assets in space. That was made publicly available. That information was discussed somewhat in the Gehman report. And there was some criticism that the Office of Space Flight had rejected the offer by this agency to take images and determine to what extent there was damage on the leading edge of the wing. And my job was to help facilitate meetings with the senior leadership of that agency and help establish a new set of terms and conditions that would ensure that there was a standing requirement and [that] never again would we have different sorts of criteria and gates that we'd have to consider before allowing that sort of thing to happen.

Paul Pastorek, the general counsel, Bill Readdy, and Bryan O'Connor were instrumental in negotiating those terms. But I must tell you, and I don't mind putting this on the public record, that I for one, and I believe many others join me in this, I for one will go to my grave never understanding why Bill Readdy and his team rejected [the original] offer. I've listened to the [official] explanations. I must say it still baffles me. [After the accident, fixing the decision-making process associated with this imaging issue] was one of the things that I was involved in [at an initial stage]. I then handed the baton over to these other gentlemen to resolve the situation so that in the future, a future Bill Readdy won't be in a position to make what in retrospect turned out to be a very, very poor judgment call.

I must say, again, without getting into the classified area, that it is arguable to what extent that imagery would have had any practical value. But nonetheless, in those circumstances, one has a fundamental obligation to assure that you did everything humanly possibly to ensure that the astronauts were properly protected and so forth. I think history will, properly, not look kindly on that particular judgment call.

WRIGHT: Why don't we take a break about now, and we'll regroup and start again.

STADD: Great.

[Tape change]

WRIGHT: Courtney, you were selected by President George Bush to lead the transition team for NASA, after Dan [Daniel S.] Goldin announced his retirement or resignation from NASA. Tell us how you were selected for this job, and then also about those months and how you put that plan together to find the right person to lead the agency.

STADD: Let me first clarify that when I was appointed to head the transition in December 2000. Dan Goldin [was still some months] from announcing his retirement. Dan was still very much in a "running NASA" mode. So we can get back to Dan and his situation, if you don't mind, in a moment. I just want to clarify that Dan had not announced plans to leave at that point.

WRIGHT: No, I'm glad you did.

STADD: As you recall, by the time the election was decided by the [U.S. Supreme] Court, there wasn't a whole lot of time left for transition. Normally, transitions have a couple months, at the least, to prepare. We only had a couple of weeks. NASA transition teams in the past have had as many as thirty, a dozen. This team had me [and I was it]. And it was only at my insistence that we ended up with one other full-time individual, and he is a dear friend and colleague, Dr. Scott Pace.

When I was given this assignment, at that point the transition Headquarters was in McLean, Virginia, before it moved over to 1800 G Street, which is the traditional place that's set aside by the General Services Administration for transition teams for incoming administrations. When I walked out on that day, I remember [it was cloudy with] some snow flurries, [and I was] thinking, "Oh, boy. How do I do this job? It's [huge and they've given me a very] little bit of time [to get the job done]." I immediately thought of Scott Pace. I said [to myself], "Who would have the bandwidth, the passion, the energy level, and be willing to give up his weekends, the nights, the holidays?" I called Scott [and he] immediately said yes and we went into action.

It was one of the most intense experiences of my life, until *Columbia*. We had extraordinarily short deadlines, with a staggering amount of information, and there were only [the two] of us [working] full-time. We were assigned a little cubicle at 1800 G Street, and we were surrounded by other agencies with handwritten signs on their cubicles that said National Security Council, State Department, Department of Commerce, and so forth. I want to add that not all agencies had a transition team assigned to it, given the brevity of the time available. So to those who ask the level of the White House's interest, the level of the President's interest, I always make the point that [at least] we had a transition team, so that indicated some level of interest by both the President and the Vice President.

When I sat down at the desk the first day, I was handed a piece of paper that identified some areas of interest in space science and Space Shuttle and Space Station that we were asked to begin to focus on. [As a footnote, I was certainly mindful of the irony of my situation.] It is worth remembering that in January '93, I was a [President George H. W.] Bush appointee working at NASA, and it fell to Administrator Dan Goldin to give me my pink slip, so it was ironic that I was returning [in a leadership position vis-à-vis the agency]. I should say that Dan

Goldin and the team really received us warmly and were very cooperative from the first moment on.

Ed Heffernan, who was the [NASA] Chief of Staff at the time, could not have been more cooperative, more supportive, and so it went for the other senior managers. In fact, at transition headquarters, there was a white board where we would score how cooperative the agencies were being, and NASA got, from day one, a top score. Other agencies got a top score, too, but the point is that NASA never dropped from getting a top score, at least from our standpoint, in terms of cooperation.

[Not surprisingly], NASA had reams of material that they had prepared for the incoming administration, so Scott Pace and I were confronted by a number of rather large volumes of data that went into some detail explaining each of the NASA programs, talked about the personnel issues, budget and so forth, as well as [providing] insight into the proposed budget that was part of the outgoing [William J.] Clinton administration's initiatives.

It also fell to [us] to be the individuals who were informed, in December, of the $4.8 billion overrun with the Space Station. Armed with that information, [we] came back to transition Headquarters and informed the senior leadership that one of the challenges in the "in" box at NASA, confronting us from day one, would be resolving this significant budget overrun.

So it fell to us to sift through this [agency's] voluminous information. We did so, both at transition Headquarters and at NASA. NASA set up a little transition office for us on the fifth floor. I say little; it actually could have been [as big as wanted—but] we didn't need a lot of space. The agency was very generous in offering us whatever support we needed. So Scott and I would commute between Headquarters and 1800 G Street. We interviewed and met with a number of NASA officials. We spent many, many, many hours with Administrator Goldin, both

in his office as well as in his townhouse on Capitol Hill. He held nothing back in terms of giving us very candid, very useful insights into the issues, challenges, into personnel-related issues. Again, he could not have been more supportive.

Armed with the inputs from the Administrator, from our interviews, from our sifting through the data that was provided by the agency, Scott and I drafted a transition book, and this book was intended to really spell out the facts. It was not intended to be prescriptive; it was intended to be an empirical documentation of what we believed to be the major issues confronting an incoming administrator, and an analysis of the programs and so forth, so that hopefully you'd have a one-stop shop, user-friendly manual that would very quickly and succinctly as possible summarize the state of the agency at the programmatic, budgetary, and personnel levels.

That book was shaped under the supervision of Gary [R.] Edson, who is currently a senior White House official. He's an extraordinary public servant; he's very demanding, but was also a master at getting the best out of all of us in a breathtakingly short period of time. There were a few times when he was a very tough taskmaster, where Scott and I were rather anxiously awaiting Mr. Edson's appraisal of our product, and, fortunately, he seemed to like what we did.

One of the things that I treasure is a letter from Gary Edson, in which he thanked me and Scott for the team, and I framed it and put it on the wall [in my NASA office], and every day when I went to work at NASA, I'd look at it as a reminder that it is possible to survive what can be sometimes very demanding and tough circumstances.

We could not have survived without the support that we got from NASA, and I certainly, for one, could not have survived without my extraordinary co-pilot, Scott Pace, who has

unbelievable intellectual bandwidth and was able to digest the material, synthesize, and analyze it with me.

[Among other recommendations], we proposed that perhaps it was opportune to focus on a different sort of Administrator. In this case, we felt that given the Space Station overrun, given other organizational challenges, perhaps it was time to focus on someone with a lot of background in management, preferably a CEO [Chief Executive Officer], a corporate CEO, who didn't necessarily have to be an engineer. I had worked for the late Secretary Malcolm Baldrige at the Commerce Department, who was a nonengineer, who ran a technical company very successfully. So I had seen examples where nontechnical people can run technical operations. By the way, I'm sure that many university presidents would agree with me that sometimes doctors make the worst administrators of university hospitals. James [E.] Webb, the legendary Administrator, was, of course, a nonengineer and to this day is regarded as the benchmark manager of the agency.

However, our model also required, in order for it to be effective, that the deputy administrator be technical and have detailed knowledge of NASA as an institution and have a working knowledge of the programs both at the Headquarters [and] at the Center level. My benchmark was George [M.] Low, one of my heroes, a former Deputy Administrator. And by the way, I should add that to make this responsibility [as transition head] even more daunting, when I first sat down at my desk [on] the first day, I was given a transition paper written by one of my predecessors, and it was written by none other than George Low. [Knowing] that George Low was my predecessor was a very humbling experience.

It was interesting, [and] somewhat depressing, in reading Low's analysis, to see that many of the [challenges] that he had [described as facing NASA] were [many] of the very same [challenges] that were beginning to emerge from our own work..

Once it was approved by Gary Edson and his colleagues, [we provided the final transition book] to the senior White House people, the Vice President and others, and that book, because it was done for the incoming administration, and as long as we kept the book out of NASA, it was not "FOIA-ible" (Freedom of Information Act). So only very [select group of] people have ever seen it. [And] only a very few people will ever see it, unless the President and his people decide to make it available in the National Archives. But Sean O'Keefe obviously reviewed it.

[I can certainly] tell you that not only did we propose this executive management model [that I described earlier], but we also called out the necessity of tackling the Space Station's [financial management issues] up front. [We felt strongly] that the agency, [especially Headquarters], really needed a hands-on manager to deal with some morale issues, and there were a lot of budget and accounting performance issues that needed addressing.

[It is worth noting that] everyone we spoke to in the agency, people on the Hill, people in the contractor community, [as well as] unsolicited comments, all focused on the fact that the agency needed to have a new vision, and we tried to capture that in the document.

We also frankly talked about the risks associated with the Space Shuttle and the fact that the focus on safety that had been [a priority of the] previous administrators, certainly by Dan Goldin, needed constant vigilance. We also made reference to the Chinese beginning to develop inroads into human spaceflight and, of course, they just recently had their first successful human spaceflight in Earth orbit. We tried our best to identify the challenges that would be facing an incoming administrator.

We also felt it was important to have an administrator that was politically connected into the White House and into the Congress. It was our sense that NASA, as a sub-Cabinet agency, tended to be a bit of an orphan, and really needed the attention at the senior levels in order to deal with a lot of these outstanding issues.

I should add that it was my intent, after handing in the transition report, to go back to the private sector. I had no intent of going into the government in a formal fashion. But it became clear to me that part of the method in the transition office was that if you headed up the transition, that meant you [also had the relevant] corporate expertise and memory. I was encouraged, if you will, to consider going to the agency for some limited period of time. They were very gracious about it, and, frankly, the more I discussed it with Scott Pace, talked to my wife about it and so forth, I recognized that I [had] an obligation, frankly, to go over and help the new Administrator—[including helping] the current Administrator make an effective transition to [his successor]. So I went over wearing two hats, as Chief of Staff and White House Liaison.

I don't recall whether I mentioned this in the last interview, but at the first senior staff meeting, when Dan Goldin introduced me, I started off by saying that "Before I was rudely interrupted eight years ago, I'm very happy to rejoin the NASA family."

I really did enjoy the year with Dan. [Of course], it was very stressful. Working with Dan is a unique experience. He is on 24/7. There was not a day—I include Saturdays and Sundays—where we were not in communication. Dan was constantly strobing the system, to use his phrase, and certainly my job was to ensure that he was getting the support he needed from the White House, while at the same time we were also looking for a successor.

I committed to Dan and his family that to the best of my ability, there would be as dignified a transition as possible, and Dan has thanked me on numerous occasions since for

honoring that commitment. I was able, at [Dan's retirement] dinner, to read a letter from the President that I think demonstrated the President's, mine, and others' appreciation for his sacrifice and willingness to stay on for that period of time, which was almost an additional year. He left, of course, in November 2001.

By the way, that farewell dinner that was given for Dan, as I recall, was on the day of the STS-108 launch, and it was only because it was delayed that I was able, with Dan [Daniel R.] Mulville, who was the Acting Administrator, to get back and participate in that dinner for Dan [Goldin]. Dan Mulville was the Acting Administrator. I identified Dan as the Administrator. Dan Goldin thought he was a great candidate. Dan also felt it important to identify a couple of other candidates. Frankly, I didn't hesitate to go over to the White House and say, "This is the perfect guy." Dan Mulville is a man of tremendous integrity. He's one of the most gracious people I've ever worked with. Over his sixteen or seventeen-year tenure at NASA, he had held a number of critical positions, including Chief Engineer. He was a gentleman that I felt could oversee the bridge between the departure of one Administrator, [including being a source of leadership stability] during [the upcoming Shuttle] launch, and provide the type of stability that an incoming Administrator should expect.

[This period of transition between Goldin leaving and the arrival of a new Administrator], was [frankly], a little anxious for people, because some people recall, not with particularly fond memories in some quarters, Acting Administrator [William R.] Graham, during the *Challenger* experience. I think at some visceral level, at a gut level, a number of people were concerned about an Acting Administrator as we went through this launch. But very quickly Dan Mulville's demeanor and command, I think, put everybody at ease and you couldn't have asked for a better person for that transition. He and I worked hand in glove to ensure that the incoming

Administrator [was provided as much support as possible. This included our not doing] anything that would preempt or otherwise co-opt key decisions, but, rather, ensured that there was continuity of operations at the agency. As I mentioned, we were launching Shuttles. We didn't delay anything because of the interim period waiting for a new administrator; that whatever personnel decisions, whatever programmatic decisions we made, we did so with an eye to ensuring, again, that whoever came in—I mean, at that point, we knew it would be Sean O'Keefe—that there was nothing we did that would unfairly constrain him in one form or another.

WRIGHT: What can you share with us about the candidate selection process?

STADD: Well, I was part of that selection process from the get-go, even while I was still at transition headquarters, and I always try to tell people that there were no shortage of candidates interested in running NASA. There were some rumors at the time, some reports in the media, that there was a dearth of candidates. Instead, there was a challenge of finding the right individual, right background, to fit the circumstances that were facing NASA. So the White House actually relied to a large extent on my judgment call, and I worked with White House Personnel, with the Political Office.

Obviously, the White House was doing its own outreach as well, but they would bring names to me, have me vet them. I had my own names that I would bring to their attention. Stuart Holiday, Darren Bearson, [who worked in the White House Personnel Office] were critical to the selection process, [as well as, of course, Clay Johnson], the head of the White House Personnel at the time.

I felt it was very important that we try to make an effort to find individuals that could bring some diversity to the front office. Frankly, I was stunned that in its forty-five-year history the agency had never had a woman running the agency or a deputy woman run the agency; we'd never had an African American; we'd never had an Hispanic; we'd never had an Asian. We'd had these white males, you know, for forty-five years. And although I'm not one of those who believes that you should artificially look to sacrifice getting world-class talent in the name of doing something "politically correct" in terms of diversification, I've been around the community long enough to know that there were plenty of talented people of various diverse backgrounds.

So we pushed hard for either an Administrator or Deputy Administrator to represent a diverse background, for a couple of reasons. One was that if you looked at demographics, it was very clear that the women and minorities, like the Hispanics, are becoming a majority in the population, and this is a public institution, after all. And along with that, the fact that there simply weren't enough white males alone to satisfy the need for engineers and scientists. So without women, without minorities, we could not attract, frankly, the generation of engineers and scientist that were fundamentally required in the out years. So there was "It's the right thing to do" motivation and then there was the self-preservation motivation.

Also, I accompanied Dan Goldin to a number of speaking engagements where he would be talking to minority students, for example, and with genuine passion he would talk about encouraging them to pursue the hard sciences and engineering and perhaps pursue a career at NASA. It struck me that if I was sitting in that audience and I was a minority and I was watching a white male tell me that, I couldn't exactly resonate to it as effectively as someone from my own background. So that was another reason that we felt it was important. So that was

always in the back certainly of my mind, I believe the White House as well, as we were sifting through and finding the right person with the right management skills.

Frankly, finding the right person with the right management skills is very tough. It takes a form of masochism to take these jobs and go through Senate confirmation. They're very brutal. The paperwork that you have to fill out is excruciating in terms of opening up your life and disclosing everything; tracking all your travel, all your contact information. Every speech, every word that you've ever uttered in the public realm has to be documented. And, of course, in the confirmation process, more and more, it has become an arena for the political opposition to score points. So not only do you have to go through the challenge of disclosing everything in your life, and [incurring] the transaction costs of getting that information as accurate as possible, because if anything is inaccurate, that opens you up to additional scrutiny. But then you have the additional "entertainment" of finding yourself—you, who have now probably given up your lucrative practice in private sector, have sacrificed vis-à-vis your family, because these jobs are all-consuming—on full public view and you're open to any member to take potshots at you, whatever the gratuitous reason.

So, finding people willing to open themselves up to that is not easy. Finding people, who at their prime, willing to leave their career track and to make that sacrifice, makes it even more difficult. So we spent months trying to find the right people.

I recall going to an embassy event, the French Embassy, with Dan Goldin, where he was given special recognition by the Ambassador. Around that time, Dan had announced that he was leaving, and the French wanted to give him special recognition. It was a wonderful dinner at the embassy. I had gotten to know Sean O'Keefe in his position as the Deputy OMB [Office of

Management and Budget] Director in the previous months because we were working together, along with Dan Goldin, on the Space Station funding issues. And O'Keefe came to that dinner.

At the end of the dinner, I remember going back to the NASA office—it must have been about eight o'clock—and I called White House Personnel and I said, "You're going to think I'm crazy, but I think the person that ought to be the Administrator is actually right in front of us."

And there was a pause on the line and they said, "Well, keep this quiet, but the President's ahead of you." The decision had already been made. And I, of course, was absolutely delighted, because Sean certainly met the criteria in terms of connectivity to the Oval Office. He'd worked in the Senate for eight years, so he was on a first-name basis with some of the critical members of both the House and Senate. He was a little too much of an academic for my taste. I mean, I would have preferred to have somebody from the corporate world with a lot more operating experience than he'd had. He'd only been Secretary of the Navy for a few months. He had been Comptroller; he had, of course, worked at OMB, so he brought an important, as he would call it, important bean-counter skill.

But I was overjoyed that we finally had someone identified for the job, after almost a year [of searching for a candidate]. Also, the agency needed, in terms of continuity, to know that the President had identified someone. And having someone of that senior status sent a very powerful signal to the workforce of the concern and the focus it was getting from the White House. I'd been telling the workforce in the previous months that this White House cared, but now I had additional tangible evidence for them to see.

And I will tell you, during that year with Dan, I turned down just about every public speaking engagement [I was offered]. And to the great frustration of the media, I turned down just about every interview [request]. The reason was that I'd made the personal commitment that

my priority ought to be on the workforce. I knew that there were some morale issues. I knew that from a leadership standpoint, communication with the people, the men and women of NASA was critical during this transition period. So I never turned down, to my knowledge, any invitation to go speak to a group of NASA civil servants.

I set up meetings to go to as many of the program offices as possible, and, of course, the workforce was voracious for information, and I gave them as much as I could. I tried to enter into what I would call a moral covenant, both with the workforce at large and with all the senior leaders. I said, "I'm going to be as honest, as forthcoming as possible. My quid pro quo, my moral covenant, is that when I ask that you treat information in a sensitive fashion, please respect that." And I'm pleased to tell you that, probably to the chagrin of Keith Cowling, who coordinated the *NASA Watch*, that I really can't recall anything that ended up on *NASA Watch* of any particular sensitive nature. [The] relationship that I had with the men and women at NASA [was] based on [mutual] trust [and so] those things that really were sensitive and still were being thought through and weren't ready for prime time, people respected [the need for confidentiality] and held back.

Of course, I was subject to more rumors than I care to remember. I think I was supposed to be Administrator or Deputy Administrator on several occasions. But [I was] in [a] good position when Sean became Administrator [to] provide him [important] insights [into the agency based on] the level of trust with the workforce that is so critical to providing the type of support an Administrator needs from his or her Chief of Staff.

WRIGHT: When Mr. O'Keefe came on board, how did your duties change and what were some of your major focuses that you wanted to help [with to ensure] a smooth transition?

STADD: Well, of course, Sean had such excellent working relations with the White House, that a lot of the interference work I was doing between Dan Goldin, who was a holdover from the Clinton administration, and the White House was no longer needed as much. Sean had walk-in rights into the Oval Office; I mean, within constraints. Like everybody else, he had to make appointments and so forth, but he did not need me to make appointments to go in and see the Vice President and see the Director of OMB and other staff people in the West Wing.

So my White House liaison became a bit more classical, which was to focus primarily on personnel matters, [such as] recruiting, in coordination with the Administrator, our political appointees. I was responsible for ensuring that whatever events that we did in coordination with the White House, [such as visits by the astronauts to the Oval Office, were] effectively supported.

And I must say that this President really enjoys meeting with the astronauts. I don't mean this to be a partisan observation, I think it's a statement of fact, but I found from speaking to some of the astronauts that the previous Administration, when there were photo ops [opportunities] in the Oval Office, they were a very quick in and out [operation]. With this President, [however], he spends quality time [with the astronauts]. I remember the first crew that I brought in—I think it was the Ken [Kenneth D.] Cockrell crew, if I remember correctly—I think they were scheduled for fifteen minutes, and for a President who prides himself on being punctual, I think we were in there for about thirty, thirty-five minutes. He was very, very interested in the crew and the mission and so forth.

But Sean was able to handle a lot of the heavy-lifting [involving] White House interaction, which, by the way, is what an agency head is expected to do. So my White House

liaison function really migrated more, as I said, to more of a classical White House liaison model.

Then as Chief of Staff, my job fell to [assisting O'Keefe who was] new to the space area. [When] he was on the Senate appropriations [committee, O'Keefe] had some involvement in helping provide the funds for the replacement vehicle for *Challenger*, so he'd had some [exposure to space issues] but he was certainly brand new to NASA and brand new to the space community. And I'd been in the community for some decades, so I was able to bring him insight into the people, into the issues. And, of course, at that point I'd spent a year at the agency, so I had the working knowledge of the people and the issues that I was able to pass on to him.

Speaking of [personnel issues], frankly, one of the major events I was involved in was facilitating, shall we say, the departure of the previous Johnson Space Center Director, George [W.S.] Abbey, who had been there during a lengthy period of time. Mr. Abbey had worked very closely with the previous Administrator. Johnson Space Center is very critical, played a very critical role vis-à-vis the Space Station, Space Shuttle, both of which represented huge impacts on the budget. [My involvement] in putting new management down at Johnson Space Center was a great assist [to] Mr. O'Keefe in terms of relieving him of what could have been one major personnel challenge down there. So I helped on that and basically acted as the connective tissue to assure there was effective transition between [that of his predecessor and O'Keefe's tenure].

I assured all the AAs, all the Assistant and the Associate Administrators, that they would have their opportunity to make their case, for their program and for their continuing on, to the Administrator, and I hope and I believe that I delivered on that promise that I made to the AAs.

WRIGHT: You also assisted in bringing Fred Gregory in as Deputy Administrator.

STADD: I did. Let me clarify on that front. I had recommended to [Acting Administrator] Dan Mulville that Fred Gregory be a placeholder AA for Space Flight. By no means did we envision Fred continuing on in that position. [In fact, I understood that he was actively considering retiring from the agency. Of course, making such an appointment was the] prerogative of the new Administrator [but] I [for one] did not in any shape or form envision Fred as the Deputy Administrator. [With that said], he's a very fine individual; he's a hero; he's a patriot, [and we had recommended strongly that the Office of the Administrator urgently needed to recruit more minorities as role models for young people. It is certainly the right of an Administrator to pursue a personnel strategy that fits his or her particular agenda.]

WRIGHT: During your first year, back at NASA, the tragic events of 9/11/2001 occurred, and government agencies throughout the country had their security measures impacted. Can you tell us how NASA reacted and responded to these new events in the country?

STADD: [On the day of 9/11] I was standing in the Administrator's office, and you have a view of the Pentagon in the distance, and I was standing with [Administrator Goldin]. CNN [Cable News Network] was showing the imagery of the World Trade Center's having been attacked by the airplanes, and while I was standing with Dan, we felt the ground vibrate. Now, remember, we're at least a mile and a half to two miles away from the Pentagon. And then we began to see a little bit of smoke curling up from the [other side of the] Pentagon. We had no idea, of course, what had happened. A few minutes later, CNN reported that a commercial airliner had gone into the Pentagon.

The Administrator and myself, Rich [Richard] Williams, the Chief Medical Officer, literally walked to every office at Headquarters to ensure that people knew what the situation. [We informed them that if they wanted to leave, they were free to do so; otherwise, they were welcome to stay in the building, which was probably the safest place to be given the traffic gridlock that was quickly emerging in the D.C. area.] I thought Goldin demonstrated tremendous leadership [on that day]. Our biggest job that day was to ensure that people knew that the front office was providing the support that they needed.

Now, again, in typical NASA fashion, we had quickly, on the spot, working with Dave Saleeba, [our head of security], determined that we would let certain floors out in [a given] order, so that there would not be chaos in the garage. At the same time, I was on the phone with the Office of Personnel Management, and while I was [discussing this situation with] OPM, which was one of the critical [agency] nodes in terms of dealing with emergency situations, I was informed that the local Council of Governments had indicated that the government was closing down and that personnel were free to leave. So suddenly, we were confronted with chaos and people were leaving; [in an] orderly [manner], I might add, but nonetheless, people were leaving in droves from all the floors, resulting in some chaos in the garage. Dave Saleeba had the presence of mind to go downstairs to the garage and have people turn their cars off so we didn't have the added problem of [potential] carbon monoxide poisoning.

I must say that I can only think of one individual who came close to being anywhere near panicked and demonstrating close to a semi-hysterical behavior. Everybody that I dealt with in the agency, with that one exception, were very professional and very deliberate.

We learned some [valuable lessons]. We learned that the public address system in the building was useless. It turned out that our public address system had been put in by Boston

Properties that owned the building at the time, and it really was intended [primarily] for fire alarm[-related] emergencies. The only way to access the public address system was to go down into the lobby. So I brought the Administrator down, but when we activated the public address system, the siren went off. So we shut that down quickly, because we realized that that would simply exacerbate the sense of crisis and emergency in the building, and that's why we ended up walking to every office.

[So] one lesson learned [that day] was the need to install ways for the Administrator and the front office to communicate to everyone. Eventually, I stood up, under the auspices of the Deputy Administrator, managed by Jim [James] Frelk, who's the Director of Headquarters Operations, a plan that was intended to put in place communication technologies to allow the Administrator to communicate with everyone in the building. That was still a work in progress when I left the agency, but—fingers crossed—they have that in place. So that was one major lesson learned from that experience.

WRIGHT: After Mr. O'Keefe took his position and a new normalcy—if that can be a word used for that office—began, one of the tasks that you assumed in April 2002 was to be in charge of the task force involved with Freedom to [Manage]—tell us about this program and how you became involved and what were some of your goals that you wanted to accomplish.

STADD: I will, but, again, if I may, make one other comment. I also had to deal with the anthrax threat in the weeks following 9/11, and I want to take a moment to give tribute to Rich Williams. We really were blessed. Rich Williams was the one individual that I encouraged the [incoming] Administrator to allow me to hire sight unseen. Rich was a flight surgeon from the Air Force

and was immensely qualified to be our Chief Medical Officer. [He] had another job offer and was in a situation where he really needed to get a commitment from the agency, even before Sean came over. Sean said [to me], "Based on your description, run, don't walk; hire this guy."

Rich really proved his mettle in this anthrax situation. He had been through [Operation] Desert Storm, so he had actually been in the field, under the threat of biological attack, so he brought immense credibility to the podium when we held town meetings with the Headquarters personnel. We actually had a spore found, a couple of spores, I think, in our correspondence unit, as I recall, so he was there to allay people's fears, provide a bedside manner that was very calming, and to very carefully explain what anthrax was all about and the symptoms and how to deal with it.

So as I think about my two and a half years at NASA, that wedge of time really did coincide with some extraordinary events. Although they were events that all of us in this nation could have done without, it really did bring the best out of people.

F2M, or Freedom to Manage, is a derivative of an initiative that was coined by the President himself. There's a pending piece of legislation in Congress that was introduced the first year of the administration that refers to flexibility in management. I forget the exact nomenclature. But it was the President's view that so much of government is encumbered by rules, regulations, laws that probably warrant going back to and reviewing whether, in fact, they're still needed. Some of them go back decades, and in many cases, people probably don't even remember why they put them in place to begin with….

Well, for whatever reason, the legislation hasn't gotten a lot of standing on the Hill. It does, I guess, represent a bit of a threat to some of the rice bowls on the Hill and so forth. But

nonetheless, it didn't prevent those of us in the executive branch from proceeding with our own variation of that theme, and at NASA we did so in the form of Freedom to Manage.

[W.] Brian Keegan, who was the former Chief Engineer, was appointed by Sean to head up the first Freedom to Manage, did a commendable job until he retired. I think he [managed F2M] for a [few] months. Then Sean came to me and asked me to replace Brian.

As was typical of my conversations with Sean, we talked no more than maybe ten minutes, fifteen minutes. We understood one another, and I had a good sense of where he wanted to go with this. Basically, his charge to me was, "Stand this thing up, be aggressive, be proactive, and I want to give license to every person at NASA to go back and feel free to come forward with a policy, a regulation, even a law, they regard as impeding their ability to do their job. Then you have this group review it on its merits, and if you find that there are regulations, rules, and laws that need revisiting, we'll do it. Okay?"

So I went about restructuring the group. I purposely named myself co-chair and didn't set it up with a chairman and a vice chairman. I wanted my co-chair to be a senior career civil servant. Then I went about purposely populating the team—I kept a number of the people that Brian Keegan had staffed up, but I brought in others as well, all of whom represented senior civil servants, career people, from HR, Procurement, the Budget Office, External Relations. People like me come and go as a political appointee but [I wanted to the convey to the workforce that] their colleagues in the career workforce take this seriously, and to the extent to which I could make the civil servants on the team believe that this was a serious long-term effort, I believe that would make my job a lot easier in convincing the rest of the workforce.

I also was sensitive to the fact that Headquarters has a much-deserved reputation—I'm talking about "Headquarters" over the decades—for engaging in "flavor of the month" and

[thereby] driving [the Field] Centers [to distraction]. So just as Centers drive Headquarters crazy sometimes, I am very sympathetic [to the perception at] the field Center level that some of the initiatives that come out of Headquarters don't seem to make a lot of sense or have a half-life sometimes measured in months. [For example, there are situations where] Headquarters would ask a field Center or all the Centers to turn the world upside down to execute a given Headquarters initiative, and after the Centers have saluted and reorganized their resources accordingly, then right in the middle of it, Headquarters tend to stop things and reverse course. So I knew I had a bit of an uphill challenge in convincing the field Centers that this [latest Headquarters' initiative] was serious.

We rolled up our sleeves. We immediately went to work to address some of the issues that had been addressed by Brian's group. They had sent a survey out and so forth. It was my sense, frankly, for the reasons I just alluded to, I didn't think the field Centers really took this Freedom to Manage very seriously. I think putting me in as a direct report—well, Brian was, but I think putting me in as the [Chairman, given my other responsibilities as] White House Liaison [and] Chief of Staff, probably helped give this a little more prominence, if you will. Therefore, I think people took it a little more seriously, I think.

I also believed in what [the Administrator and I] called the power of small examples. That is, one way to build credibility is to do something, no matter how modest, that would demonstrably improve the quality of an employee's environment. [For example], we would talk about trying to act as a one NASA community and yet, up until recently, if you showed up with a badge from another field Center to Headquarters, you had to sign in as if you were a complete outsider. So it sent a very negative message. Working with Dave Saleeba, under Freedom to Manage, we changed that so that now your NASA badge, be it from Johnson Space Center,

Marshall, Langley [Research Center, Hampton, Virginia], any of the Centers, it is treated the same as a Headquarters badge.

There was another [situation] that a rather larger issue that we tackled in order to demonstrate credibility. It had been a source of great frustration to officials around the agency that they could not easily reprogram travel funds. That is, after you ran through your travel budget, you were prevented, without going through a lot of "Mother, may I?'s" and incurring a lot of transaction costs, to reprogram your money for travel and so forth.

Well, we, under Freedom to Manage, did some excavation and found out that that [impediment] went back to a law that was [pushed] many, many years ago by a very disgruntled staff person and a member [of Congress] who [had a bone to pick with] NASA. We were the only agency that was under that constraint. That staff person, that member, they [are now] long gone. And we so changed it. We went up and we actually, in the last legislative cycle managed to successfully turn that around.

[After] a few months had passed and we had actually changed, reformed some things, some small, some big, and I felt we had gathered enough credible evidence of how serious we were, [I felt we now needed to go out] and face the workers at the field Centers [in the form of] town meetings. We put together a very short video that had an excerpt from the Administrator talking about the importance of Freedom to Manage, [as well as] an excerpt from the President talking about Freedom to Manage, and then I brought [out] my colleagues on the team. We spent about forty minutes under each of the categories, of HR, Procurement, etc., showing what concrete things we had done. Each time, I asked the Director to introduce us, sit with us.

At the first Center we went to, we had a very large crowd. I found out later on that all the workers were directed to come. It was done with the best of intentions by the Director's office.

From then forward, I said, no. [I made the point that even] if I only had [one or] two people in the audience [who came voluntarily], that [would] tell me I got one person [who] really believe in what we're trying to do, because if I can convince that one person in the audience, they will go back and, around the [proverbial] water cooler, convert six people. I'd rather have six people who are genuinely committed than three or four hundred people in an auditorium who are there under duress. [I am proud to say that] we had standing room in almost every town meeting we went to.

When I got to the podium after the directors—and the directors were wonderful, to a person, in their support they gave this—I would always tell the workforce that people like me, [that is, political appointees], are a dime a dozen; we come and go. "I'm going to ask you, please, to give me forty minutes, try to make a case why I think you ought to take this seriously and then we'll open up the mikes [microphones], and take whatever questions you have." And they gave me that forty minutes. So by the time we got to open mike, I think people really were convinced that "These people aren't kidding around; they are serious."

Then I remember also one of the first town meetings, somebody got up, reminded me that there's a Whistleblower Protection Act, and I was somewhat [taken aback]. I said, "Well, I'm familiar with that, but you don't have to worry about it." It gave me some inkling how tentative people really were, how concerned they were about stepping out and really expressing their true feelings. So I tried to create an atmosphere where they all felt comfortable saying whatever they wanted to say, however critical.

We also had, after that session, which usually lasted about an hour—I tried to be sensitive to people having their other jobs that we were competing with—each of the issue experts on my

team [would] moderate a [special side] panel later in the day with whoever was interested in showing up. And often those were crowded as well.

We ended up, as a result of visiting all these Centers, with a little under a thousand inputs. [The F2M team would also] have video cons [conferences] once a week. They'd go for a couple of hours. We [also] set up a website that was user-friendly. It took us a while to get there, but we did. People like Sue Garman, Lynda L. Haines, Greg [W.] Hayes, Jim [James W.] Kennedy, who's now at Kennedy Space Center were [invaluable to our team's success].

What I also would tell the workforce at the town meetings is that "If you ever allow me back, when I'm a civilian, [and] give me the privilege of visiting your Centers, if I see that [F2M has] become a coffee mug or a key chain, I know we will have failed. But if I come here and whatever [label] a future [NASA] administration [puts on F2M], if the janitor, the executive assistant, the chief engineer, the Center Director, feels that they are free to say [that] something is dumb, question it, and go to this Freedom to Manage-type forum and seek action [to fix it], that to me will be the greatest legacy of all."

And I'm proud to tell you that through the leadership of Lynda Haines and Sue Garman and company, it does continue. And, in fact, occasionally I get e-mails—and I got one just two days ago—that the Freedom to Manage was able to turn around a regulation that prevented NASA employees from taking a government car to their house, even though it might be a more efficient use of their time in order to get to a meeting or whatever. This is of particular relevance to people who work at our more remote sites—Wallops [Flight Facility, Wallops Island, Virginia], Dryden [Flight Research Center, Edwards, California], White Sands [Test Facility, Las Cruces, New Mexico], to name three examples. We had people driving unbelievable hours in order simply—they went to their house, they'd have to double back to the Center, pick up a car,

go back again. And I think any commonsensical taxpayer would be aghast because actually, at the end of the day, [this nonsensical regulation was generating additional] costs. So we put the regulation out for comment and I was informed that, as of now, we've changed it.

We probably have made hundreds of changes, some small, some big. As a result of Freedom to Manage, Center Directors no longer have to do a "Mother, may I?" with Headquarters in terms of making organizational changes. Obviously, if they [involve] serious and significant changes, they would do well to inform the Associate Administrator of these changes, but it'd gotten to a point where they were being so micromanaged that it really was reaching absurd levels.

We encountered a lot of silly stuff that was encumbering people's ability to do their job. I knew we were making progress when in places like Stennis [Space Center, Mississippi], where we do a lot of our engine testing, that the gentleman out there who heads that test stand, where you have the engineers and technicians out there, would hand in inputs over things they thought were silly and could be changed. He said this was marvelous because it really rejuvenated a lot of his folks. It's probably the one initiative that I'm the proudest of, frankly, because I know it will live on through the good efforts of the civil servants.

The other thing that I did was encourage, not direct, but just encourage the Center Directors to consider whether perhaps maybe it might make sense to have a local Freedom to Manage group, but only if it made sense. And sure enough, these little [F2M] groups began to crop up, at Glenn [Research Center, Cleveland, Ohio], at Ames [Research Center, Moffett Field, California], at Marshall, Johnson Space Center, Langley and others. [The Center leadership realized that] there are a number of issues that are local, don't need to be brought up to the Headquarters, federal level, and that's been a wonderful thing to watch as well.

I remember one Center Director told me that some of his most cynical employees came up to him after [one of] our town meetings and said, "You know, I think this is one Headquarters initiative that we actually believe might actually be working."

WRIGHT: How was the Freedom to Manage initiative affected by the *Columbia* accident?

STADD: Well, as you might expect, our energy went into the recovery effort, and it was my feeling that given the fact that that was our priority, I did not want to divert—as important as Freedom to Manage is, I did not want to divert people's time into that effort. [I felt it was better to] free them up to focus on the most important item at that time, which was the *Columbia* recovery.

I also thought, frankly, it might be a bit inappropriate [to pursue F2M] in the weeks and months after this disaster. The *Columbia* was very much an open wound within the agency, and focusing on reorgs [reorganizations] and streamlining regulations and policies seemed a bit unseemly to me. I asked my colleagues, the civil servants, to "Please keep your ear to the ground for me, so I don't have a tin ear, and let me know when you think the timing is okay to resurrect the group."

There were still Freedom to Manage efforts ongoing but in a more low key manner. [I understand that some of the] local [F2M] groups at the Centers still were doing their thing. I'd be remiss if I didn't say that Greg Reck was my co-chair. I'd known Greg for many, many years. He just retired last year. And he just did really a masterful job of trying to keep [F2M] afoot. I did not have time, personally, to focus on it for a couple of months. But when we did finally come together, people were ready and able to reengage and, as I said a few moments ago, as I sit

here, after having left the agency, it's still continuing in earnest; still having impact, from what I'm told.

WRIGHT: You did make that decision to leave the agency and return to private business. Can you tell us why you felt this was a good time for you to leave the agency?

STADD: Well, to begin with, when I headed up the transition, as I said earlier in the interview, I anticipated only staying with the transition for about a month and going back to my other job. I then decided that it would be a great honor and made a lot of sense to go in and help ensure that the transition book was properly executed and that I could provide a role, hopefully, in providing a smooth transition in the role as [both] Chief of Staff [and] White House Liaison. [Again, I thought that my tenure at NASA Headquarters] would be measured in a few months. [I] never expected that it would take until November 2001 [before the White House would name a successor to Dan Goldin].

Because of my checkered entrepreneurial background, I do not have a lot of [financial] resources [to fall back on. Further], I was looking at the prospect of my oldest daughter heading to college, [with] the youngest one not too far behind. Money was really a paramount issue so it was constantly on my mind about when the timing would be best. [I was also] frustrated by the fact that I absolutely loved working in the agency and working with the people. The challenges and so forth were tremendous. And I knew, as I said in my farewell remarks, it was one of those jobs where you know that it will never get better, that you will look back and be nostalgic. I just love the people at the agency. It's a remarkable group of people. I've never worked with such a group of people. I never will again. It's just the nature of the types of people that come to work

at NASA. So I'm caught. If I was a millionaire, I'd still be there, but I wasn't, and I was caught between the burn rate [affecting my financial resources] and [that] I really liked working at the agency.

[We] did not have a new Administrator announced until November. I remember telling my wife, "Good news, bad news. The good news is, there's a new Administrator who's been announced. The bad news is that he's asked me to stay, and that we actually get along [well] with one another." So we talked about it and agreed that it probably made sense for me to stay on longer [while we tried to make our savings stretch a bit longer].

I want to say at this point in the interview that I really cherish the friendship that I was able to develop with Dan Goldin. I became really very impressed with his technical prowess. Intellectually, he's quite a brilliant guy and there were aspects of his personality that I feel really bad that a number of people never saw. He loved kids, and he was very strong on education. I really learned a lot of things working with him, and we did develop a friendship and it's one that continues to this day.

When Sean asked me to stay on, I said, "I'll be the easiest person you've ever had on staff in the sense of I will leave at a moment's notice. I'm here as long as you think, and as I think, I'm providing value added. Short of that, I'm out the door." So he came in knowing my situation, but that I would make every effort to stay as long as I could.

Some months prior to *Columbia* I came to see him and I said, "Sean, my rubber band, [in terms of my money situation], has broken. I have got to look at an exit and work with you to try to ensure that I get a successor in place," and so forth.

He said, "Okay." He was very kind, encouraged me [situation]. As a university professor, he also doesn't have a lot of resources to work with and empathized with my situation.

So we went through the holidays, and around the time of the *Columbia* accident, I was in the midst of thinking through, okay, here's my exit strategy, and planning [accordingly]. And [then] *Columbia* happened. Of course [all my exit planning] went out the window, and it wasn't really until May that I really felt that things were sufficiently in hand, that Sean had his feet firmly planted in terms of what he wanted to do with the agency, and that we at that point had built up the team sufficiently that I could walk out the door with my head held up high, feeling that I had done what I was asked to do. So it was May when the announcement was made.

It was unfortunate. You have sometimes limited control over timing, but it was around the time [my departure] was announced, that Art [Arthur G.] Stephenson, the Director of Marshall, also announced that he was leaving. But I think enough people knew around Washington that [I] had been thinking about leaving some time prior [to the Columbia tragedy and so therefore my leaving] was not [in any way associated with the Columbia investigation]. I want to add that Art really had been at Marshall for about, I think, five, six years at that point, and really had been thinking about a departure [for some period of time as well. From his standpoint, in the wake of the tragedy], it just made sense, for a new director to be named.

These are very difficult decisions. The press always tries to come up with these conspiracy-related [motivations] and so forth, but, as I said to one of the NPR [National Public Radio] reporters, sometimes the facts are as boringly straightforward as they appear. [Former Shuttle program manager] Ron [Ronald D.] Dittemore [is another example of an official who] had been talking about leaving long before *Columbia*. People [like Art and Ron] stayed to a certain critical point in the recovery period and then very smoothly handed the baton—at least, I feel they did—to their successors. So I think that went as well as it did.

I hated leaving. There were a lot of things I still would have loved to have done, but it was time for me. I think if there's any pattern in my career, I'm somebody that likes to go in, troubleshoot, get something in place, and then once I see it more or less working, I then have to move on.

This doesn't suggest that this agency is not confronted by some extraordinarily profound challenges and that there aren't some other fundamental personnel and other programmatic changes that have to take place, but life is short. I've got other obligations, too, that I owe the family. I've spent almost over a decade in public service in one way or another, which means at least a decade of barely seeing the family. A lot of people are in that boat and a lot of people have different levels of tolerances for it, and I admire the sacrifice that I see, but Courtney Stadd had reached his level of tolerance. I'm actually pleased that I made the decision when I did.

I also want to say that the farewell that I was given, and I had the honor of sharing my farewell event with the great Dr. Jerry [Jeremiah F.] Creedon, former Director of Langley Research Center, [who], at that time of the farewell event, was the Associate Administrator for Technology. [Jerry's an] unbelievable person [who] worked forty years at NASA. And the [positive audience] reaction we got from the NASA community [at the farewell ceremony] was extraordinary. I [now] understand why, once you're with NASA, be it two and a half years or forty years, you're always with NASA. So, with great pride, I was initiated into the NASA Alumni League and I carry the card with great pride.

WRIGHT: Unfortunately, we've reached the time limit for today. Are there any other thoughts that you want to add before we close this session out?

STADD: Sure, and if—I'm just looking at the time—if you want to go a little further on the commercial stuff, but that's up to you, but if you have run out of your energy, because I made a little bit of change over there, so I've got a little more time, half an hour, forty-five minutes, if you have the energy level.

WRIGHT: We're going to stop for just a minute, though.

[Tape recorder turned off.]

WRIGHT: Before we close today, let's talk some about NASA and the commercialization of space. While you were at the agency, share with us what ventures, or not ventures, that occurred during that time period.

STADD: During Dan Goldin's tenure, given my commercial [space] background, the Administrator asked me if I would form a team and ensure that the commercial practices and policies at NASA were properly aligned with the congressional laws and with the philosophical spirit behind the incoming administration's views on commercialization. And so I did that, working with people like George [D.] Baker and others at Headquarters, [as well as] Scott Pace, who at that point, as I recall, had gone to OSTP [Office of Science and Technology Policy]. He was Director of [Aeronautics and] Astronautics. So I was still working with Scott, even though he was over at the White House. [After about a year], I finally got him back as my Deputy Chief of Staff at NASA Headquarters. Scott played a very important role in supporting my efforts in

commercialization. [We] put together an internal document that ensured the type of alignment that the Administrator was looking for.

I [also recall being] approached by a private-sector company called Team Encounter. Team Encounter was financed in part by a gentleman who paid one of my first paychecks in commercial space back in the seventies. His name is David Hannah. David Hannah is in his eighties. He is one of the great pioneers in commercial space. He's a lifelong friend of the Bush family. He was also the chairman and the financier behind Space Services, which launched the Conestoga private rocket off Texas back in '82, as I recall. I was working with the competing commercial rocket company, [located in California]. We take great pride in having launched the first completely privately built rocket. David Hannah and his team, with Deke [Donald K.] Slayton, the late astronaut, who was leading that effort, launched a refurbished Minuteman government rocket, but they did so on a privately financed basis and certainly deserve their place in history.

[Anyway], when [Hannah] and his people approached me, they were financing, developing something called Team Encounter, which is a solar sail venture that is slated for launch in the next two years; I think 2005, if my memory serves. I believe it will launch on an Ariane rocket. They came wondering if there might be some experiments that we might be willing to put on the rocket. It was very intriguing, and I said to the representatives of the company that I'd be very pleased to introduce them to Ed [Edward J.] Weiler, who I happen to be personally a great fan of. He's Associate Administrator for Space Science. Ed is one of our best managers at NASA. He's also one of our toughest. And I told them that if you can get past Ed Weiler, then you stand a very good chance of perhaps finding an experiment where the agency might be willing to fund it and have it put on their venture.

There was a gentleman that was involved with the effort in a senior capacity who I'd known over the years, who I did not trust. So I had one condition, which was that that individual would never enter the building associated with this project as long as I was in the job, and they held to that. I said, "I want to see your engineers; I don't want to see the marketing guy," the one I had in mind. And they held to their promise. They brought in some very good engineers. I put them in touch with Ed Weiler. His [technical people] sent them through the wringer. They passed with flying colors, and within the past two months, the agency announced that they were going to be putting a space science experiment on Team Encounter, paying about $6 million for it, and it's a wonderful example of partnership with the private sector.

[Now] this is a [NASA] experiment [where] the odds are it would probably not have launched because of the cost of getting to orbit. It's an interesting experiment; it's an important experiment, but it wasn't exactly a priority experiment, and this was really an opportunity, a target of convenience [involving] this Team Encounter, because they were building a space vehicle on their own dime, and for minimal cost. I just think it's a great example.

It's one of the first times that the Office of Space Science has ever partnered with the commercial sector, so I'm hoping it'll establish a useful precedent, because I'm sure all corners of NASA were rather stunned to see Space Science, of all things, entering into this commercial arrangement with the private sector. So I take great pride in helping facilitate and support that.

The other area of involvement had to do with something we called the Enterprise Engine. It was my feeling and it was Scott Pace's feeling that the agency needed to think out of the box about how we could more effectively align [NASA's] future requirements with innovation from the private sector, so we suggested something we called the Enterprise Engine. [The idea was that it] would take a modest amount of money, a few million dollars, and would identify some

promising ventures and see whether, through some rigorous selection criteria, in order to avoid conflicts of interest and be sure this was done in an open and fair fashion, identify potential technologies that the agency could leverage and therefore save the agency money and also inject innovation into the process.

My understanding is that the Enterprise Engine did get some funding on the order of, I think, about four or five million….

We ran into great resistance within the bureaucracy. The tech [technical] transfer people felt this was a bit of a threat; didn't really understand it. There was a lot of resistance. But the agency needs to do more of these out-of-the box experiments, in the case of dealing with commercialization. The problem is that there's a dearth of people [in NASA] who [have] come from the private sector [and] who have [relevant] business experience. [The absence of such expertise] is a real impediment to dealing with commercialization.

The current Administrator, Sean O'Keefe, it became clear to me in discussions with him, doesn't really have an extensive commercial background. I mean, he sat on some corporate boards. He's a conservative Republican and he certainly believes in the private sector, but he, I think, really believed that the agency should focus more on research development and leave it to the private sector to take what they consider to be technology that they can productize and let them go off and deploy the magic of the marketplace.

I tend to be a bit more proactive, largely because my background is mostly entrepreneurial/commercial, and I know how frustrating it is to deal with the agency in commercial areas. It's gotten better. It still can be frustrating. But he was Administrator and, frankly, you know, he by no means discourages commercialization. I mean, he's a big supporter of it. But in his defense, he did have a lot of challenges, had a lot of challenges, to deal with pre-

Columbia, let alone post the *Columbia* accident. So I [suppose it is] understand[able] that commercialization simply didn't get the priority standing that it might have under a different type of leadership.

WRIGHT: Your interest in space commercialization lasted for, well, more than three decades. Tell us why your interest continues and where your energy and enthusiasm is going to go now.

STADD: Well, there are days when, if I'd had any inkling of the tribulations, the frustrations, and the lack of robustness in the commercial space market in the year 2003, I'm not so sure I would have pursued it. But perhaps it was a blessing that I didn't know, because those three decades have given me adventures and experiences and relationships with an extraordinary group of people that would be rare, I suspect, to find in any other industry sector.

I'm forty-nine so [when I saw] *2001[: A Space] Odyssey* [when it first came out it] had a big impact on me. And if you look at a lot of men and women of my age and peel back their interest in space, Stanley Kubrick [and] Arthur C. Clarke, played a [big] role [in shaping our vision of space]—coming [as it did] in the wake [of] Mercury, Gemini, and Apollo [heroes]. So if you can do more than fog a mirror and you had interest in the future, space was the place to go.

We all agreed, believed—I believed—that in the year 2003, the question would be, "Do I vacation with the family in Key West [Florida] or do I spend a few more years, save up the money, and take that excursion to the Moon that Uncle Harry and family just took and was just bragging about?" We really thought—I thought—in the year 2003, that we would have not only commercial hotels and things of that sort in Earth orbit, at least at some preliminary level, but

mining of asteroids and so forth would be if not a common occurrence, at least, again, we'd be at the beginning stages of mining the resources of space.

I guess what's astounding to me is that the cost to orbit [has remained as] dramatically high and expensive as it has been for the past thirty years. [We've] seen very little change in the cost [of access to space]. Given the dearth of [truly] successful commercial space enterprises, [beyond space communications], it is amazing to me that any of us still continue [in this business]. [Laughs] But what keeps me going and keeps other people I'm aware of is really a belief, a very strong belief that space does offer a couple of fundamental benefits.

Number one, I'm very much a believer in the survival argument. This planet has seen global species terminated by—depending on what theory you believe—by asteroids and so forth from outer space. We have no protective mechanism today to prevent something like that from happening. We've also proven as a species to be pretty talented at doing considerable damage to our own god-given environments, and, of course, there's, unfortunately, no end to humankind's imagination when it comes to warring on one another and representing lethal threats on a global basis. So I am a charter member of the club that believes that space does offer an opportunity for our species to establish ourselves on other surfaces beyond the Earth. So, if nothing else, as an insurance policy to continue our species, I think exploring space is critical.

Secondly, I do believe that we don't have an inkling as to what the opportunities are commercially. Yes, we have spent decades doing microgravity experiments, finding that in most cases we can do them more effectively on Earth, [especially] given the costs. But I think that demonstrates a lack of imagination by the critics. Again, Arthur Clarke had it right, I think, fifty years ago, when he was writing about the medicinal benefits of Earth orbit, of being in an environment where you're in a low-G environment and you [are liberated from] this tremendous

gravity factor that presses in our cardiovascular system. So he enumerated a whole number of human diseases that would be relieved in a zero-G or low-G environment. We haven't even scratched the surface in terms of medical therapies that would benefit from space, let alone scratch the surface in terms of using the low-G environment for insight into different diseases, like cancer and so forth.

I mentioned mining asteroids. It's very clear to our scientists that the asteroids are the source of valuable minerals, and there's no question that we will see space mining at some point.

I must tell you that I also have no question in my mind that there is intelligence somewhere in the universe. I think that, as one of my NASA colleagues says, "The last crumb of human arrogance is to think that we're alone." Our telescopes are discovering on a monthly basis, planets with atmospheres. When I was growing up, the idea that you would find other solar systems, other planets with atmospheres that might perhaps support life, was considered fantasy. We have, as the late Carl Sagan would say, billions and billions of galaxies, [that represent potential sources of life].

It's rather interesting to live in an [age] where so many people think perhaps we're the only source of intelligence, because it gives me some insight into the world that [Nicolas] Copernicus and Galileo [Galilei] lived [in]. [I mean we] can't imagine how people would think the Earth was flat [or was the center of the universe]. We can't imagine why Galileo could conceivably be so persecuted for what today we take for granted. And yet think about it. Today we walk around absolutely convinced—many people do—that we're the only life available in the universe. And I'd like to be as prepared as possible for what I think might be an inevitable contact. It may take centuries, it may take millennia. I don't know. It may happen tomorrow.

You know, I disagree with many of my colleagues who say that exploration is something that's sort of built into societies, that you need to explore; [that is part of] our DNA. There are many societies that have opted not to [explore beyond their borders] and done okay, but I think great societies, over the long period of time, need to explore. I must tell you that although I do believe [the] Apollo landing on the Moon will achieve recognition in history in generations, centuries to come, I don't think it will be the only [exploration for which we will be known].

We obviously have explored the oceans. [But we are also on the cusp of exploring the extraordinary potential of the nanoworld. We also] spent a good part of the twentieth century plumbing the depths of the human psyche. [In the world of] art, [we] went from representational landscaping in the nineteenth century, portrait art, to plumbing the symbolic depths of the human psyche. We've channeled our exploration in lots of different ways, but I personally believe, from the standpoint of maintaining a vital society and culture, that we need to reach out [into the space frontier]. I also believe that it's going to take the entrepreneur [has a vital role to play in ensuring that the space frontier is permanently settled].

I have left an agency that has many, many great facets. In Earth science, we're [responsible for] almost 85, 90 percent of global-change research through our aircraft and our satellites. We're at the cutting edge of a lot of aeronautical technology, although personally I'd like to see us double that budget. But nonetheless, we do phenomenal work in aeronautics. In space science, we rewrite the textbooks on a regular basis in terms of our knowledge of cosmology. Spaceflight needs a lot of work and it's going to take what we've seen in the aeronautics and other sectors, real pathfinders, the Howard Hughes of the world, [as well as NASA leadership, to introduce true innovation into space transportation].

I'm involved in a number of commercial activities, but one of them is something called Bigelow Aerospace. A gentleman by the name of Robert [T.] Bigelow is a self-made billionaire in Nevada, who made his money from the construction boom in Las Vegas. He's also a president [and] co-founder of the Budget Suite Hotels. Since his teen years, he has wanted to pursue space. He decided in his fifties that he'd made enough money to cover [his] family [and] cover other things that he cared about. He's taken a significant portion of his wealth and devoted it to space commercialization. After a few years of exploring different ventures, he fell onto one of my favorite ventures at NASA, called TransHab. I've been a great believer in inflatable technology since I was briefed on it by Dr. Lowell Wood, when I was at the White House Space Council over a decade ago.

We terminated TransHab due to its—actually, my predecessors terminated it just before I got to NASA, due to budget [and Congressional concerns about the diversion of resources], not because of technical reasons. But this gentleman, Mr. Bigelow, now has a Space Act agreement, [as well as] an exclusive licensing agreement for the use of the TransHab technology and is very aggressively developing these modules.

He called me shortly after I left NASA, [and he offered a job with his company]. At first I was very reluctant. He explained his vision to me [and] I was quite enamored with it. I said, "I'm going to use my own tattered credit card and I'm going to go out [to see your facility in Las Vegas] on my own nickel. I want to, first of all, see what you've done, but I want to watch how you interact with your engineering team." [During my visit, I was] very impressed [with what I saw].

I walked into this 40,000-square-[foot] facility and there were these [test article] modules sitting in his plant. He intends to deploy them by 2008 [or 2009. They have an extensive

amount of volume] and they represent low-cost technology. He has a formidable engineering team that he's building at a rapid pace. We're not sure who the [actual] customer base is yet—[although we have been approached by various agencies with potential interest in placing payloads on these modules].

The other thing that impressed me about him is that he's a pragmatist. He listens. He struck me as a very effective CEO, and he doesn't have unrealistic expectations. He's in this for the rest of his life. [And] he doesn't walk around with artificial return-on-investment horizons of three to five years.

So he's asked me, [in my consulting capacity], to help him develop the user base—universities, industry, including everything from biotechnology to microgravity, Earth observation, agriculture, hotels, space tourism. You name it. [It's a] very exciting [opportunity].

It'll have to be launched on the biggest expendable launch vehicles, [such as the] Proton [or the] Atlas. Unfortunately, due to some very poor decision making that we made in this government, we're captive in terms of humans going up and returning from the module on the Russian Soyuz and the Progress. History will also not look kindly on people who, some time ago, allowed this nation to end up with the Shuttle as a single-point failure [with] our contingency [being a vehicle owned by] a foreign country. Whether it be Russia, France, or any other country, the point is that putting [one] self in a position where [you find yourself reliant on] another government [involving] something as critical as [transporting] people [to and] from space is foolhardy.

I think people like me hopefully are a bit more realistic about [the many challenges associated with developing the space frontier]. As I've said before in the interview, translating theory into practice in the space arena is formidable, but I believe that NASA plays an important

role, but I believe that, in my heart of hearts, particularly after working at the agency, that when it comes to commercialization, it's going to take pathfinders like the Robert Bigelows, the Elon Musks, and others out there who are the ones who are really going to push the envelope.

The interesting point about commercialization of space is that we're actually approaching it much differently than we had anticipated thirty years ago. A lot of us had anticipated more of a quantum leap in terms of space factories and space transportation. But I almost see us crab-walk-wise backing into developing a market place.

What do I mean by that? When you go back to the [Wilbur and Orville] Wright brother era, [it] was followed by the barnstorming era, and the barnstorming era was critical to educating and developing an informed consumer base, [which] ultimately [supported a robust] commercial aviation industry. [In the case of space commercialization, we skipped that crucial consumer education step.] So [companies] like the zero-G commercial enterprise that former astronaut Byron [K.] Lichtenberg, former NASA official Alan Ladwig, the X-Prize promoter Peter [H.] Diamandis, have formed, and I believe will be becoming operational [sometime in the near future], will provide zero-G opportunities for people to go fly in an airplane—I think it's an L-1011—and give them twenty-some-odd seconds of zero-G. I don't know their business plan, but I understand they may be reaching out to executives and others. But that's an important contribution to getting people acclimated [to ultimately going into space].

One of the great honors I had at NASA was flying on a KC-135 and experiencing the zero-G, and I can tell you that once you have that experience, it's pretty addictive. It's another reason why I have no doubt that the promise of space will be fulfilled at some point.

What motivates me also, to go back to your earlier question, is that I'd like to be part of the generation that helped democratize the opportunity for enjoying space. I may not live to see

it, but I'd at least like to be able to contribute to it. I've yet to meet an astronaut who's not frustrated by the fact that he or she cannot share the experience with everybody else. Commercialization offers that opportunity over time. Commercialization offers innovation, because if you have commercialization, you're going to have competition, and if you're going to have competition, you're going to have product differentiation. And one of the problems with the civil space program today, the lack of competition means that we end up with single-point failure access to space. We end up with no contingencies, [for example], other than relying, in this case, on the Russians.

There are people like Robert Bigelow out there who came to the conclusion that they can't wait; they can't afford to be captive to the government timeline. They've got to create their own [space initiative]. And it is my hope that in working with him on this, that we may create an opportunity, an interest in the marketplace, that will encourage other people, like Elon Musk and other entrepreneurs, and perhaps even the government, as appropriate, to provide the transportation access and so forth that is required to assure we have the type of robust commercial activity that a lot of us are convinced we will see at some point.

But after thirty years, I must tell you that I can't say with the same level of confidence what I've said in my twenties, that I necessarily will live to see it. But notwithstanding all the challenges I've lived through the last three decades in the business, my confidence has not been dampened. I still believe absolutely that it will happen and I believe that strategically it is critical that the United States be in the lead.

I must make another comment, which is that the U.S. aerospace industrial capability is atrophying in the civil space. We're increasingly finding ourselves dependent on foreign sources. I believe that the political system is in denial, because we've had no shortage of

commissions and studies that have documented this dire state of affairs. I believe that the recent Chinese launch, which was an extraordinary achievement by the Chinese. [I know that there are] people who think [this exploit was equivalent to] going back to the future and [that] it's nothing [compared to what] we're capable of doing. Sure, but from the standpoint of what the Chinese invested and did to get to achieve that successful orbit of that astronaut, it's really formidable.

New people, new countries, are taking the promise of space quite seriously. History is replete with nations—[e.g.], Portugal, [and] Spain—[including] China, [who had at one point in their history] led [world class] exploration [expeditions] and [then] decided for their own peculiar, idiosyncratic reasons to step back, [leaving] the vacuum [to be] filled by other countries. How ironic [would it be for the] the United States, which, in fact, [historically] filled the exploration vacuum left by other countries would in turn [step back from space exploration—an] area that we, along with the Russians, helped pioneer.

But as I have this discussion with you in November 2003, that is a fear of mine, that if we don't make very smart decisions that help support our commercial people, that future [Americans] could end up in a second-class situation vis-à-vis other space faring powers.

But we've got the talent, and I believe that we do have the leadership, if it's properly harnessed, to ensure that doesn't happen. But [we're at] a very critical decision point, [or] window of opportunity, to determine what path we [ultimately] decide to take.

WRIGHT: It's like a very exciting time in your life, and we look forward to keeping up with all that you're going to be able to do the next decade. Are there any other areas or thoughts you would like to offer at this time before we close out the session?

STADD: I would say that, overall, that it was a great honor working at the agency, that I thoroughly enjoyed working with the Administrators that I worked with, the people at the agency, the Center Directors. I have lifelong friends. [I] walked in convinced NASA plays a critical role; [and I] walked away convinced that it plays a very critical role for society in terms of investing in our future.

I do feel that it's an agency that, as I said before, is confronting a lot of serious challenges, and I am concerned that there is a need for the political system to converge on a common path and give the agency the support it needs. You know, agencies, like people, have DNA, and NASA's been living off a certain DNA structure for many decades, and it is time to reengineer that DNA. The problem is the political system has a noise-signal ratio today in terms of dealing with the war on terrorism; the Iraq war; dealing with homeland security, of course; dealing with economic issues, and NASA doesn't get quite the attention that I believe it really warrants. But I believe this President, if provided with the appropriate road map by my former colleagues will, I'm absolutely convinced, [provide he needed vision and resources].

I believe we've got some very good members of Congress, Democrat and Republican, willing to do it, but it's going to take a real active leadership, starting first and foremost with the current Administrator. I certainly have him and have my former colleagues in my thoughts and prayers.

But it's been a great ride and, as you say, I look forward to continuing my efforts in the space community in the years to come.

WRIGHT: It sounds like you have many adventures planned and, I'm sure, many surprises around the corner.

STADD: We do. If I may have one more moment, one other project I'm working on of great pride. I was called shortly before I left NASA, by a former news producer at the local NBC-TV affiliate, who wants to do a documentary on the Torah that Colonel Ramon took to space, and I immediately said, "Absolutely. I'll do whatever I can to help you." And since leaving NASA, I have been working with him as an associate producer [and technical advisor] on the documentary. It's been a great adventure for me, because this little Torah that Ramon took to space is [truly] a symbol of the triumph of the human spirit.

It's a Torah that went from the depths of hell at Bergen-Belsen [concentration camp in WWII], where the principal investigator on one of the experiments for Ramon was given this Torah by a rabbi [while has imprisoned as a little boy]. He was actually bar mitzvahed and learned Hebrew, this little boy, from this Torah, [in the midst of unimaginable misery]. And the rabbi, of course, perished. The little boy survived and became a chief researcher on this mission. The image of this Torah and the unimaginable circumstances of [the] Bergen-Belsen [concentration camp from where the torah came], floating in space during Colonel Ramon's press conference, joined by KC [Kalpana Chawla], joined by Dr. [Laurel B.] Clark, joined by Commander [Rick D.] Husband—the other crew members were either sleeping or doing other things—was mind-boggling [for me].

As we work on this story, it's a reminder that this isn't an Israeli story or a Jewish story; it [just] happened to involve a Torah and happened to have been brought up by an Israeli citizen, but every time I get engaged on this project, I'm reminded of what keeps me going in the space program, because space really does provide that unique place where the impossible things happen and people can join in and share it on a global basis. With all due respect to all the other

pioneering sectors, it's one area that really gives me that feeling that there's just no other place like it.

WRIGHT: This sounds like a very worthwhile opportunity. I hope that we'll have a chance to view that soon, and you'll be able to share that.

STADD: Yes, we hope to have it finished within the year. We intend for it to be an educational documentary and intend to share it with as many people as possible.

WRIGHT: We look forward to seeing it.

STADD: Thank you.

WRIGHT: Thank you so much for all of your time today and in January [2003].

STADD: Thank you.

[End of interview]