

NASA JOHNSON SPACE CENTER ORAL HISTORY PROJECT

ORAL HISTORY 2 TRANSCRIPT

FREDERICK H. HAUCK
INTERVIEWED BY JENNIFER ROSS-NAZZAL
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ROSS-NAZZAL: Today is March 17th, 2004. This oral history with Rick Hauck is being conducted in Bethesda, Maryland, for the Johnson Space Center Oral History Project. The interviewer is Jennifer Ross-Nazzal.

Thank you for meeting with me again today. I know your schedule is busy.

HAUCK: Thank you. On St. Paddy's Day, my father's mother, Florence Fogerty, would be pleased to know that we're doing this on St. Paddy's Day, if she were still with us.

ROSS-NAZZAL: Thank you. We appreciate it.

I wanted to ask you, in the last interview when we spoke, you mentioned that you were actually told by George [W. S.] Abbey and [Richard H.] Dick Truly that you were going to command the return-to-flight mission, but you were told that you couldn't actually tell anyone this information. What was your reaction when you heard this?

HAUCK: Well, I was absolutely thrilled that I was entrusted with that mission. I think every member of the Astronaut Office, probably without exception, wanted to be on that flight, so I was thrilled with it. The fact that I couldn't tell people about it or speak about it publicly, any concerns about that were dwarfed by the enthusiasm that I had, knowing that this gift was in my pocket now. I knew that, of course, until something's announced, it can be changed, and so that

was in the back of my mind. But it wasn't an overriding concern; once we had the crew put together, as I think we talked about, with Dick [Richard O.] Covey coming in to fill the slot that was left when Roy [D.] Bridges went back to the Air Force, and "Pinky" [George D.] Nelson was invited back from the University of Washington [Seattle, Washington] to round out our crew.

ROSS-NAZZAL: Can you talk a little bit about the crew relationship? I've actually seen videotape of your crew in orbit, and you guys were wearing Hawaiian shirts. Somebody was surfing I believe.

HAUCK: That's right.

ROSS-NAZZAL: Can you talk a little about that?

HAUCK: Well, we had a great crew, and one of the reasons for it was [that] we had focused so much, at least three of us, on getting ready for that Shuttle Centaur mission, which we've already talked about, and I'm not sure if we mentioned that all of us were experienced space fliers, and so there were no training issues. In other words, as the commander, I didn't have to worry about someone who hadn't flown in space before, were they going to adapt well or weren't they and so forth. Those issues were absolutely not on my mind, and each of the five of us could take a substantive responsibility for various aspects of the flight. So that was really a pleasure.

We were all socially adapted, I thought. Dick Covey was one of my very close friends, as was Pinky Nelson. I had great respect for Mike [John M.] Lounge and Dave [David C.]

Hilmers. I hadn't worked with them as closely as with Pinky and Dick, who were classmates of mine, class of '78. So we got along well, and I think we understand the need to enjoy what you're doing, and so what you saw on that tape of us in our Hawaiian shirts—why don't I tell you how we happened to have Hawaiian shirts, if I haven't already done that.

There was a ceremony down at the Kennedy Space Center [Florida], when electrical power was plugged back into *Discovery* for the first time after its overhaul period. As you might imagine, you have this most complex machine in the world and someone takes the power cord and plugs it into the wall and electricity surges through it, and you're hoping that you're not going to smell smoke and everything works. So it's a very big milestone, and we were invited to come down for that occasion. As I recall, Forrest [S.] McCartney was the head of the Kennedy Space Center at the time. We were presented with these Hawaiian shirts by the people that did the overhaul and the preparations in the Orbital Processing Facility, the OPF, on *Discovery*, and the reason is that they—I don't know if it was once a week or once or month, I think it was once a week—they would wear colorful shirts in to work. They called them their loud shirts and they called themselves the "Loud and Proud" group. So we were made honorary members of the Loud and Proud group, and we said, "We're going to have to take these shirts up into space with us."

So after we'd gotten into space, we released the TDRS [Tracking and Data Relay Satellite], which was our primary mission. We'd spoken our remembrance of the *Challenger* crew. Once we had the weighty issues behind us, I think it was on day two or maybe day three, we decided now is the time to break out the Hawaiian shirts, and Hawaii was one of the locations where we could downlink video. So without mentioning it to mission control, we got dressed in our Hawaiian shirts. Then when we came on over Hawaii, we said, "Well, here we are, we've

got our Hawaiian shirts on, and we're just enjoying our day in the sun." I think I said, "Life's a beach," right? "Life is a beach."

So we videoed that and NASA took some of that footage, and later, when we made our post-flight movie, we added some Beach Boys music to that, I think, that had been rewritten by a local band in Houston [Texas]. They had given us a wake-up call with—what's that song by the Beach Boys? Something about when her daddy took her T-Bird away. "We'll have fun, fun, fun." So that was adapted to "We'll have fun, fun, fun, till we have to put the Shuttle away." So anyhow, that was what that was all about.

And we enjoyed it. I think it's very important to have those times when you can relax. Human beings need a certain amount of smiling and laughing.

ROSS-NAZZAL: Yes, I've seen it. At Space Center Houston [Houston, Texas] they show a clip of your mission, and they also have one of the Hawaiian shirts up in the Spacesuit Gallery.

HAUCK: Oh, wonderful. I'll have to go look. I've got mine back in my closet at home, even now.

ROSS-NAZZAL: Let me go back and ask you about training for this mission. I know that you were heavily involved with training. You worked with the trainer to develop the training. How had training changed from your first two missions to this new mission, where safety was probably the most important factor for this mission?

HAUCK: Well, of course, we're talking 1987, so it's seventeen years ago, so my memory certainly isn't perfect, but I don't recall the training being significantly different. Safety is always paramount, and the failure that occurred, of the solid rocket boosters, was nothing that the crew could have had any influence over.

What I recall about it was because we were in training when the accident happened, and all of the Astronaut Office went into kind of a proficiency mode of training. So even before we were named as a crew, we were still training periodically, not at as high a level. So we had an awful lot of three-person training—CDR, PLT, and MS-2, the commander, pilot, and flight engineer, mission specialist. So I think we could have fallen asleep and still performed our reactive measures, if we had to, on STS-26.

Of course, the flight-specific training we had was for deploying the Tracking and Data Relay Satellite. That was typical of the training we'd do for satellite deployments, and we had a few other minor experiments. But I'd really say that there wasn't a significant change in the level of detail or the approach to training. We just had a lot more of it because of the downtime.

ROSS-NAZZAL: Let me take you back to launch day. You actually had to wait on the launch pad for about an hour and a half until you officially launched. What were you thinking at that point? What was the crew talking about?

HAUCK: Well, we got up that morning, and the weather forecast, after they'd sent their radiosonde balloon up—I don't know if that's the proper term—that measures the upper-level winds, and we had been briefed, before we went out to the launch vehicle, that there was an upper-level wind sheer that, if it persisted, would be a constraint to launch and we wouldn't fly,

and they weren't sure whether that was going to clear or not. Of course, it's hard to predict those.

So we really went out thinking we weren't going to launch that morning, which is—I think I joked with Bob [Robert L.] Crippen later, “Thank you for convincing us that we weren't going to launch so we could really enjoy the morning.” But, of course, we were ready to launch, and I recall riding out in the crew van, and George Abbey and John [W.] Young and Dan [Daniel C.] Brandenstein—I guess, if Dan was the Chief of the Office then—getting out of the van as we went on, and having that same feeling of, “This is a very special morning.” Here you drive up to the launch pad and you're the only people around, other than the folks that help you strap in. So I'd say it was very sobering, but we still thought, “Well, we're probably not going to launch.”

Well, we got strapped in. I recall at one point I guess we were told it looked like that constraint was released. Well, let me back up a little bit. I think they had a problem with a fuse in one of the circuits having to do with communications. I'm not sure. So there was a period of time when someone had to go back to a parts bin somewhere and get a fuse and bring it up and install it in the cockpit. So that was a delay, but at that point we were still being delayed, I think, for the upper-level winds.

Then we got down to the T-minus-nine point and we could listen on the loop and we could hear the Launch Control Director polling the various stations, and we'd hear, “Go,” “Go,” “Go,” and we were convinced that when it got to Bob Crippen, who was the mission manager—I think that was the term—we were going to hear him say, “No go for winds.” Then we heard his voice, and he said, “Go.” [Laughs]

So we kind of looked at each other and said, “Ooh, I guess we're really going to fly.” So in that T-minus-nine time frame, which actually is more than nine minutes from launch because

there's some built-in hold time, we're lying on our backs thinking, "Okay, we're really going to do this."

I heard Dick Covey say, "Uh-oh," and, sadly, that was the last phrase heard from *Challenger*, someone's voice, maybe Mike [Michael J.] Smith, saying, "Uh-oh." So those were the wrong words to speak then.

And I said, "Covey, what's wrong?"

He's in the pilot's seat and he's looking out over the beach, out over the water, and he said, "I see a rain squall out there and it looks like it's headed our way and it may keep us from launching."

I said, "Dick, just don't use the words 'uh-oh' again as long as we're flying in this machine together." That didn't cause a problem, and we counted down and launched at—I forget what time it was, but that morning.

ROSS-NAZZAL: Did you have any concerns, given the fact what had happened last time on *Challenger*? Were any of those thoughts going through your mind?

HAUCK: Well, I'd characterize my thoughts, contrasted with my previous two flights, set against the backdrop that NASA, prior to [STS]-51 L, had never lost a crew after launch. They lost the Apollo 1 crew and, of course, astronauts had been killed in airplanes and car crashes and so on, but we'd never lost anyone in a spaceflight. So even though on STS-7 and STS 51-A I knew this was dangerous, I kind of comforted myself with the thought, "We've never lost anyone before, so we've got this wired; we know how to do this." Well, that comfort could no longer be delivered by that thinking after [STS]-51 L.

I was convinced that everything had been done that could be done to prepare the machine and the crew and the software, but I knew that my good friends had died the last time a machine had launched. So I was really focused on that and I did think about that. But you can't dwell on those things. It's just like landing on an aircraft carrier at night. You can't dwell on this dangerous situation you're in, because you'll be distracted from doing what you have to do to keep it from being too dangerous. So I found over my years of flying that you really could segment your thinking and push things off into the far recesses, and I was certainly successful at doing that for launch.

I do absolutely remember counting down after liftoff to solid rocket motor burnout and two minutes and ten seconds after launch and the solid rockets are gone, and I remember thinking, "Well, glad they're out of the picture."

But, you know, for years, and it may even still be true, that [according to the] risk analysis, the forecast was that if there were ever any real problems with the Space Shuttle, it would come from the main engines. Of course, we still had six more minutes to ride the main engines into insertion, so I wasn't breathing too big a sigh of relief yet.

And I do recall going through Mach 16. I would read off Mach numbers just because Pinky was down below and couldn't see any gauges, and it was just kind of to keep some kind of communication going. I'd say, "Mach 12, sixty miles," and, "Mach 15," and so on and so on. I remember Mach 16 and we were starting to get increased acceleration, Gs, as the fuel was being depleted, I did clearly think, "Boy, I hope this doesn't blow up," and, "Human beings put this thing together. What an incredible machine, and I just hope it doesn't blow up." Then, once again, taking that thought and pushing it to the back and doing that by looking at instruments and

focusing on gauges and so on, to kind of distract myself from that thought. And, of course, everything went smoothly for the rest of the mission.

I didn't mention that—I forget. Launch plus about twenty seconds, we did something called an SM alert, SM being a systems maintenance minor alert, but it's something that was annunciated and I think it had to do with the pH level in a fuel cell. It wasn't a red alert. It wasn't a yellow alert. It was this minor alert, but still, it flashes in your face, and I'm thinking, "Whoa. What is going on?" And mission control didn't say anything about it, and they didn't say anything about it because they [later] said, well, they figured we'd look at "Well, it's an SM alert. It's a fuel cell pH. Not a big deal," so they didn't want to bother us.

When we came back and debriefed, I said, "I wish you had told us don't worry about it, just to reinforce that." It was a minor issue, but it sure got our attention there for a period of time.

ROSS-NAZZAL: I noticed in some of the literature that I read about this mission that you did have a problem with the flash evaporator system that raised the temperature. How did that impact the crew and the mission, if at all?

HAUCK: I don't recall that being a big deal. You always are concerned that if something's not working precisely the way it should, then you hope that it doesn't degenerate into something that will cut short the mission. So other than us being aware that it was not operating within its normal limits, it never got to the point where we were concerned that it was going to shorten the mission.

ROSS-NAZZAL: On board this mission, you actually paid homage to the *Challenger* crew. Can you talk about that, and whose idea it was?

HAUCK: Sure. I don't remember what time, chronologically, it was, but I remember it was Dave Hilmers who one day said, "You know, we really should put some effort into deciding how we're going to remember them." And we agreed that each one of us would have a brief period where we could speak, but that we would put our thoughts all together and we would review what each of us wanted to say to make sure that it fit contextually. So Dave took a first hack at it, writing the whole thing, and that gave us some structure, and then we parsed out who would take what part, and then that individual tailored their own remarks into their own words. So I give Dave credit for the idea, although it would have come to one of us eventually. I think it said as best we could our thoughts.

ROSS-NAZZAL: What impact do you think that that had on the agency itself, this act that you did in space?

HAUCK: It was something that needed to be done, I think, so in some way I think we probably filled that requirement. I mean, we talk in space terms about requirements. I don't mean that someone was requiring that we do that; I mean it was a need that someone during the mission needed to say something that all of us could reflect upon. So we had given the text of that to our CapCom [Capsule Communicator] prior to liftoff so that once we'd said the words, they could have text that they could give to the media and so on. So that was done in advance. I think it

just was something we needed to say, and I gathered from what was said later by people in the office and so on, that it captured the thoughts.

ROSS-NAZZAL: Speaking of the press, this was a pretty high-profile mission. How did the crew deal with all of the public interest and the media interest?

HAUCK: Well, once again, we'd all flown before and there'd only been twenty-four successful missions of the Shuttle before then, which isn't all that many, looking at how many we've done now. So media interest, although it had started to wane by the time STS 51-L occurred, I think we'd all been exposed to that process. We agreed with NASA PAO [Public Affairs Office], Johnson PAO, to the level of media involvement, and the approach was similar to the previous, but as you say, there was certainly a lot more interest than, let's say, on my second mission.

I do recall that each of the anchors, Peter Jennings, Dan Rather, and I think Tom Brokaw, although I'm not sure, came down to the Johnson Space Center at some point as we approached the launch date, prior to our going into quarantine, and we spoke to each of them for footage that they could use. Of course, we dealt with the print media and a certain amount of radio. I don't remember it being terribly intrusive.

I remember that CBS did do a segment or a complete show, if you recall a show called *48 Hours*. The concept was to take forty-eight hours in the life of either some people or a group of people as it was focused on a dramatic event. So they came down during our training and did a *48 Hour* segment on the crew, mission control. Also, as I recall, they interviewed people like—oh, the science-fiction writer—oh well. They came to the Outpost, which was the name of the local bar there that some of us went to from time to time, and they filmed segments of this over

forty-eight hours. They came to the simulator building. I still have a copy of that segment, and I think it came off well. It focused on training. It was during an integrated simulation, one of our last integrated simulations, so Chuck [Charles W.] Shaw, who was the Flight Director, was in a fair amount of that.

I remember the *New York Times* sent down one of their top photographers to take some photos for a spread they were going to do in the *New York Times Magazine*, and as it turned out, I think they used a picture of Mike Lounge getting into his spacesuit for an underwater training session as the cover of that *New York Times Magazine*.

There was an incident that at the time concerned me a great deal prior to the announcement of the crew, that we were going to be a crew, and that was one of my friends from high school days was a gent named Jim [James] Reston, and Jim is a writer. He's a very accomplished nonfiction writer. He's written a number of books, and he'd done an article on me in the *Washingtonian Magazine* back in 1984. I had mentioned to him, in confidence, that I was going to be the commander of the next Shuttle mission, and he wrote an article for the *New York Times Magazine* that was published two days before that became public, or maybe the day it became public.

What really concerned me, of course, was that that decision could be reversed at any time, and I was sensitive to the fact that managers don't like to be preempted in their news. Maybe it came out, as it turned out, after it was announced, but it obviously had to go into the works before it was announced. Jim and I had a few words about that, but we're still good friends.

ROSS-NAZZAL: I'm sure you were a little relieved it came out afterwards.

HAUCK: Right.

ROSS-NAZZAL: Were there any major questions that the reporters would often ask you? When we talked about the STS-7 mission, they were asking Sally [K.] Ride all these gendered questions.

HAUCK: Right. Well, clearly, “Do you think you’re ready? Do you think that the problems have been fixed? What gives you confidence that the problems have been fixed?”

I don’t know if I’d mentioned it before, but Dick Truly, at the time Associate Administrator for Space Flight, Code M, he gave me a standing invitation to attend any decision-making meeting involving senior management as it related to preparations for STS-26. I think that was an unusual invitation. I don’t know if it was ever done before in the Shuttle Program or since. But what that gave me was the opportunity to gain confidence in the process.

I would fly over to Marshall Space Flight Center [Huntsville, Alabama], and the senior management council, which was Admiral Truly and J.R. [James R.] Thompson and Aaron Cohen and the program manager for the solid rocket boosters and so forth, sitting around the table, “Should we test the solid rocket motors this way or that way? What’s the latest on the testing?” So when all was said and done, I had the confidence in the fixes that had been made and I had confidence in the team of people that had made those decisions. I have suggested, although perhaps this suggestion wasn’t needed, but I’ve suggested to current Associate Administrator Bill [William F.] Readdy that Eileen [M.] Collins would benefit from such an invitation, and I mentioned it to Eileen also.

ROSS-NAZZAL: So you've had an opportunity to speak with both of them?

HAUCK: Yes.

ROSS-NAZZAL: Are there any lessons learned that you haven't passed on, that you think should be passed on about this return-to-flight?

HAUCK: No. As a matter of fact, people are so focused on not only correcting the previous problem, but on avoiding any future problems, that the amount of diligence exercised in getting ready for this flight, and I'm sure for the next flight, is so extraordinary that I'd be hard pressed to take issue with nor turn over a rock and find anything else that needs to be done. I hope that's the case for the next flight of Space Shuttle. I did tell my family, "This will be the safest flight ever flown by NASA, STS-26." What I did not say was, "And that guarantees that I'm coming home," because, of course, there's no guarantee. But I was comfortable that, within my view, everything had been done to prepare everything for that flight.

ROSS-NAZZAL: Is there anything else that happened during that mission that you would like to talk about?

HAUCK: Oh, I loved—wake-up calls are always fun, and Kathy [Kathryn D.] Sullivan, who is one of our CapComs, had somehow made contact with Robin Williams, and he agreed to tape wake-up calls for us. Not long before then, he had made a movie called *Good Morning*,

Vietnam, and the tagline from that movie is him on the radio as a disc jockey in Vietnam saying, “Good morning, Vietnam.” So one morning—I forget which morning—we awakened with Robin Williams’ voice saying, “Good morning, *Discovery*,” and then he went through a very amusing patter, invoking each of our names and poking fun at some things. So it was a great way to start that day, and as a matter of fact, I wound up with a tape of his preparation for that, with a lot of outtakes, things that were never used. So that was lots of fun. Other wake-up calls involved this adaptation of some of the Beach Boys songs that I thought was very well done by this band in Houston. So the wake-up calls were lots of fun.

Let me mention another thing. We knew, of course, when we came back, and we stepped off the Space Shuttle, there would be a lot of media coverage of that, and I forget who thought of it, but it was someone on our crew said, “We ought to have an American flag on board so that when we walk off, we can wave that American flag.” Patriotic gesture. So the way that was accomplished was, it was agreed that when we landed, and the ground crew came up to check on us before we exited, he would bring a folded-up American flag and a pole, I guess, a two-piece pole that we could attach it to.

As it turns out—of course, this was October 3rd, 1988, and the presidential elections were [a few] weeks later, and Vice President [George H. W.] Bush met us at the foot of the steps on the lakebed at Edwards [Air Force Base, California]. So you look at the video and he’s standing down there with Dr. [James C.] Fletcher and Admiral Truly and George Abbey, waiting for us to come down. The door opens, and out I come with this American flag, and down we troop, and we stand there shaking hands with Vice President Bush, big hug from—I’ve never seen Dr. Fletcher that emotional before, but big hug from him, big hug from Dick Truly, and we stand there for a picture. I’ve got this American flag, and on the other side of the flag is Vice President

Bush, and maybe not surprisingly, in the media is this big harangue about the crass use of the Space Shuttle crew by the Vice President for political purposes and how this was obviously a staged event and the American flag there was staged.

And I remember writing a letter to the editor of *Time* magazine, where this was opined, and I stated the facts that, “No, we were not prompted by anyone to bring a flag. That was our idea, and we were very proud to have the Vice President of the United States meet us at the bottom of the steps.” It didn’t matter whether he was Republican, Democrat or whatever. And that letter to the editor was published in *Time*, as a matter of fact.

So, in any case, after the pictures were taken, the whole crew walked around with Vice President Bush, underneath the Space Shuttle to look at it. We took this little tour. Then we went off to have our post-flight physicals. He went back to the Officers’ Club at Edwards, where Mrs. [Barbara] Bush was, with our family, and they had lunch with our families while we were going through our one or two-hour physicals. Then we got back together again on a parade stand outside of the Dryden Flight Research Center [Edwards, California], for the official welcoming home. And I recall that, in addition to the Vice President was the Governor of California, Governor [George] Deukmejian, and, of course, Admiral Truly and Dr. Fletcher, the Administrator, Chuck [Charles E.] Yeager.

It was a very hot day, very hot, and people had been sitting out in the audience for hours, and I remember looking down and seeing my uncle, who was my hero and who was fairly infirm by this time, and thinking he’d been sitting out there for a couple hours in this broiling sun. I felt badly about that. But he was the person who, when I was a child, I looked up to as a Navy pilot. So it was great to have that kind of closure.

So anyhow, we're up on the stage and everyone has time for remarks, and I remember remarking on how wonderful it was that just a few hours before, that we crossed the coastline of California—I don't know what the proper data was, but I said, "At 110,000 feet at Mach 6," and I turned around and I said, "Eat your heart out, Chuck Yeager." [Laughs] He laughed, of course. But here was one of my childhood heroes who was up on the stage with us. So that was lots of fun. And we had this sense of completion, and we were all very happy.

Another anecdote. When we left from showing the Vice President around the Orbiter, our van went into the medical facilities, and en route to that, our families were standing out there for hugs and kisses before we went in, and every one of them had what I'll call Groucho Marx glasses and nose and mustache on, so there's some photographs of all these people with these Groucho noses on.

My son was not there because he was serving on board a Navy ship in the Persian Gulf. And I will share another fun thing for me. I had taken a photograph of him maybe a year before. He was in shorts, T-shirt. And one of my good friends, prior to that launch, said, "Why don't we have that blown up to a life-size cutout and then he can be at your launch and he can be at your landing. So we did that, and so we had this six-foot-tall cutout of my son Steve, and he came to our pre-launch parties, he spent the night in crew quarters with us. As we walked out to get on the crew van, we had a crew photo of the five of us in our spacesuits, with flat Stephen in between. So then when we returned, flat Stephen was there and even he had Groucho glasses on. So that was fun.

ROSS-NAZZAL: Those are great memories.

Let me ask you about your return to JSC and the welcome-back ceremony. You said at the time that that was one of the proudest days of your life. Do you think that still is?

HAUCK: I do. I do. We had a very important mission to accomplish; “we” in the collective sense, the whole NASA contractor team, “we” as a crew. It was a relatively benign flight by design. The objectives were to get up safely and get back safely and deploy a Tracking and Data Relay Satellite to replace the one that had been lost on the *Challenger*. It was clear that this was very important to the country, very important to NASA. So to have participated in that and to have contributed whatever I had contributed was something that I could capture and reflect on, and no one can ever take it away from me. So, yes, I’d still say that. I mean, you always reflect on how proud you are about your kids and so forth, and family. Family, country. This was country.

ROSS-NAZZAL: Can you talk a little bit about your PR [public relations] trips after you came back?

HAUCK: Right. I think I’ve mentioned before, after STS-7, Sally and I made a big trip to eight different countries. After STS 51-A, we made trips out to the manufacturers of the satellites and so forth. After STS-26, we went back to NASA. We went to all of the space centers, and we went to the contractors who built the hardware. We went to Downey, California, where the Space Shuttle had been built. We went to Palmdale [California], where they’d been modified.

The objective was to continue this healing process and to really focus on those people that the success depended upon, and those were everybody that had worked on return-to-flight,

as best we could reach them. So this wasn't outwardly focused; this was NASA contractor team inwardly focused, and everywhere we went—you can imagine Marshall Space Flight Center, which was where the solid rocket booster program was managed from. That was a very emotional visit for everybody. Wherever we went, we tried to make ourselves available for autographs and so forth. I have no idea how many hundreds of autographs we signed over that period of time. Kennedy Space Center, Edwards Air Force Base.

Then we did have an invitation from the City of Las Vegas [Nevada] to go out there and be guests of honor for a celebration. They were great, and when that one was over, we had not yet gone to [Morton] Thiokol [Inc.], up in Ogden, Utah, and it was clear we needed to do that. Of course, they were the folks that built the solid rocket motors. So as the rest of our families went home, Dick Covey and I went up to Ogden and were met at the airport by Senator [Edwin Jacob "Jake"] Garn, who had flown on Space Shuttle. He said, "I called the governor yesterday to see if we could have dinner at his house, so we're going to have dinner with the governor and—," I forget, the congressman from that district. Senator [Orrin G.] Hatch, Senator Garn, the governor, and Dick and myself, and I think the senators' and congressmen's wives, the governor's wife, the spouses.

And I recall sitting at dinner, and the plates that are laid before—this is in the Governor's Mansion—that are laid before you, I'd almost call them ceremonial plates. They're not what you eat off of. They were USS *Utah*, the United States Ship *Utah*. And I said, "Are these plates from *the USS Utah* which was sunk in Pearl Harbor [Hawaii]?"

The governor said, "Yep, these were retrieved from the hull in Pearl Harbor."

I said, "My father might have eaten off of these," because my father was on the *Utah* when it was sunk at Pearl Harbor, survived. But this was just out of the blue. I'd never even

thought of that. Here I am in Utah, and I just never really associated that much with my father having served on the USS *Utah*.

So anyhow, we had dinner there. Then the next day, we went up to Thiokol, and Dick and I took the stage in our blue suits, and all of the Thiokol employees there on the shop floor, and I said, “You make good rockets.” The place went wild. This was kind of a cathartic moment for them, I think, as it was for us. That was, I think, another thing that had to happen for this healing process to continue. That was a good trip.

I’m sure we made lots of other trips. We went to Slidell, Mississippi [NASA Slidell Computer Complex]. We went to Michoud [Assembly Facility], Louisiana, the engine-testing facility, the external tank manufacturing facility. We did a lot of Silver Snoopy Awards for people that had excelled in what they did. We came up to [NASA Headquarters] Washington, [D.C.].

I recall, just prior to the flight, President [Ronald W.] Reagan came to Houston to give an address related to spaceflight. We were in quarantine at the time. It was probably just ten days before flight, so there were restrictions on who could come face-to-face with us. I think if you were going to get closer than twenty feet to a flight crew member, the employee has to have had a recent medical exam and be sensitized to the fact that if they felt they were contagious with something, they should not get any closer. So, of course we had to get face-to-face with our trainers and so forth, so they were all part of the program.

So the President comes down. We’re behind the scenes, behind a big blue curtain in Building 9 there, with thousands of people seated out front, and we’re waiting on the President—we’re in our blue suits—and I noticed something really odd, and I said to Covey, I said, “Walk with me over here towards that Secret Service man.” So we walked over towards him, and we

got within about twenty feet and he started to back up, back up, back up, because he'd been briefed to not get closer than twenty feet from the flight crew in quarantine.

Well, I've got to say that I admire the professionalism of the Secret Service. It's almost like I was playing a game with them, and I guess in some way I was, but it was clear that here was a very professional person who was observing what he'd been asked to observe.

So anyhow, the President came, gave his speech. I presented him on the dais with a flight jacket and said, "I hope there's a time after we come back from the flight that we can present this to you as a flown item." He graciously posed for lots of pictures backstage with us and our families. And after we came back from the mission, we were invited to go to the White House to present the flight jacket. My wife and I were also invited to go to the White House for the last State Dinner given by President Reagan, and that was in honor of Mrs. [Margaret] Thatcher.

I sat at the table with Vice President Bush, who had by this time been elected. I sat next to Mrs. Bush. My wife sat next to a young Army colonel named Colin [L.] Powell. Afterwards, during the dancing and so forth that takes place after the State Dinner, she said, "Oh, you've got to meet this neat Army officer that I sat next to. We were trading jokes." My ex-wife was a good joke teller, so at one point this colonel came over with his wife and said, "I want to meet you," and this colonel, later to be General and Secretary of State Colin Powell, was just as delightful as he could be.

I have a few more anecdotes about this, but it's not on the subject of spaceflight.

ROSS-NAZZAL: You're always welcome to share them.

HAUCK: Well, I recall that Orel Hershiser, who was a baseball pitcher who'd been on the team that won the World Series, I met him that night. I was in military uniform and I had all my medals on, and he said, "Gee, those are a lot of medals. Would you trade those for my World Series ring?"

I said, "Sure." [Laughs]

He said, "Well, I don't have my ring yet. I'm just kidding. I'm just kidding." So I never gave away my medals and he never gave me his World Series ring. I tried to get my wife, during the dancing, to double-cut with Tom Selleck, who was there also. He was there with his mother, because his wife was about to give birth to their baby. I said, "I'll bet he'd be a good sport, and I'm sure Mrs. Selleck wouldn't mind dancing with a man in uniform," but my wife was too reticent to do that, so she passed up that opportunity.

ROSS-NAZZAL: It sounds like you had a great time.

HAUCK: Yes.

ROSS-NAZZAL: Only a few months after your flight, you actually decided to leave NASA.

HAUCK: I did. I was forty-seven years old, approaching my forty-eighth birthday, and I knew I wouldn't do this for the rest of my life. So I was very conscious about being past the age of fifty and trying to develop a new career. So it was a very conscious thought that revolved around my age. In fact, I had made the decision to retire before our last big press conference, but I decided not to mention that in the press conference, because I thought that would distract from what the

press conference was all about. But I also decided that if someone asked me, that I would respond, and someone at the press conference said, “Are you planning on flying again?” and I said, “No.” So the next day, we had our video opportunities with the three morning shows, *Today Show*, *Good Morning America*, and I forget the—

ROSS-NAZZAL: I think it’s the *Early Show*, or *Morning Show*.

HAUCK: Whatever. And I remember Jane Pauley, who was the host of the *Today Show* at the time, in the process of this interview said, “And Captain Hauck, we understand that you’ve decided to retire.”

So I think I’m probably one of the few people who was able to announce on national television that I was on the job market. [Laughs] You can’t buy that kind of publicity.

ROSS-NAZZAL: Can you talk to me a little bit about your work with the Navy? You actually went into their Space Systems Division.

HAUCK: Right. I’d been contacted by a member of the Bush transition team prior to exiting the Astronaut Office. Ken Adelman was his name, and he said, “You know, Captain Hauck, that Congress has passed an act that establishes the National Space Council, and that will be headed by the incoming Vice President and will involve the Secretary of Defense, NASA Administrator, Secretary of Commerce, Secretary of Transportation.” I don’t think State was part of that. The idea was to develop national space policy. And he said, “We need an executive director for that,

and you're one of the people whose names have been mentioned. Would you consider that? Would you come have an interview with Vice President-elect [Dan] Quayle's chief of staff?"

So I went to Washington and had that interview, and got a call back and said, "We'd really like you to consider taking this job, and we'd like to schedule you for a meeting with Vice President-elect Quayle."

I had scheduled that meeting. Flew up to Washington, and about the same time, I'd gotten a call from the Pentagon, from Chief of Naval Personnel, Vice Admiral [Mike] Boorda, and asked me if I would come back to the Pentagon. No guarantee that I'd make admiral, but they had a position they'd like me to fill, and would I consider that. So I had these two strong inquiries, and I came from a Navy family, and when it all sorted out, I decided that I'd try the Navy position.

So I called Vice President-elect Quayle's Chief of Staff and said, "I don't want to waste the Vice President's time, and thank you very much, but I've decided to go back to the Navy." And I thought that was all settled.

Then two weeks later, in Houston, I got a call on Saturday morning. "Is this Captain Hauck?"

"Yes."

"Please hold for the Vice President," who had since been inaugurated. Very nice chat. "Your name keeps coming up. I understand you've made a decision to stay in the Navy. Would you mind coming up and chatting with me about it in Washington?"

"Yes, sir, I'll be there. You tell me when."

So I flew up to Washington and went to the White House and had a meeting with Vice President Quayle, which he couldn't have been more pleasant and so forth, but I reaffirmed that I

wouldn't forgive myself if I didn't give the Navy—this chance at the Navy. So that was the end of that.

I spent a year in the Pentagon as Director of Navy Space Systems Division, and I decided one year of that was as much fun as I could stand, and so I retired from the Navy.

ROSS-NAZZAL: What were some of your major goals or duties in that position?

HAUCK: In the Navy?

ROSS-NAZZAL: Yes.

HAUCK: That was a budgeting position, working for a three-star, Vice Admiral [Jerry O.] Tuttle, who had oversight over the Navy's Space and Communications Systems, and my particular task was to kind of shepherd the budgetary aspects of various programs, some of them classified, some of them not; the Navy's satellite systems used to support the fleet, Naval Space Command funding. The Navy, of course, didn't have anywhere near the size of the budget as the Air Force does as prime service for space matters. I had some work having to do with anti-satellite technology, some space-based surveillance things and so forth.

ROSS-NAZZAL: After you retired from the Navy, you actually went into private industry and started working for INTEC, which is now AXA Space. How did you get involved in this line of work?

HAUCK: The founder and owner of INTEC was a fellow named Jim [James] Barrett, and Jim was very influential and involved in industry's request to NASA to attempt the rescue of PALAPA and WESTAR on what became STS 51-A. Because here were two satellites that were insured, I think the total loss to the insurance market was certainly more than \$ 100 million, may have been closer to \$200 million, and there was a sense that if they could be retrieved and brought back to Earth, and refurbished, that that would not recoup the losses, but could mitigate the losses to the insurers.

So you had Jim Barrett here in the United States and a fellow named Stephen Merrett as a Lloyd's underwriter in London, were the two principals from the insurance side who wanted NASA to go get these two [satellites]. And as luck would have it, of course, I commanded that flight. I got to know both Jim and Stephen quite well and I maintained that relationship with Jim when I was in Washington in the Pentagon and Jim was here in Bethesda. And when I retired from the Navy, he asked me if I would be interested in sailing with him in his new sailboat in a race from Norfolk [Virginia] to the Virgin Islands, and I said, "Sure. I don't have anything better to do. You know, I'm unemployed." [Laughs]

But I was talking to Hughes, Midway Airlines, Mitre Corporation, Rockwell [International Corporation], and a few other companies. During the days when Jim would be driving down to Solomon Island here in southern Maryland, I would go with him a few times and we'd chat. He was in business—I'd never had business experience—and he served as a consultant to me in my job search. Then one day he said, "Rick, how would you like to be the president of my company?"

I said, "Jim, I know nothing about insurance."

He said, "Perfect." He said, "I wouldn't want an insurance person whose mind was clouded by traditional insurance." He said, "I need someone who knows rockets and satellites that I can teach the insurance business to." So, after twenty-four hours of thinking about it, it seemed like a wonderful opportunity. That was October 1990. Here it is 2004, so, almost fourteen years ago. In the interim, the company was sold by Jim Barrett to the global French insurance company AXA, and here we are.

ROSS-NAZZAL: How closely do you work with NASA now in this position?

HAUCK: I don't work with NASA, in this position, very closely at all, but I have worked with NASA on a pro bono basis mostly. The distinction that I want to make is that as insurers, we don't deal with NASA, because they don't insure. The taxpayer provides that insurance. But I've been able to stay in close contact with NASA in an advisory role over the years. I've chaired several studies. I chaired a group to give an independent look at the preparations for the second Hubble [Space Telescope] servicing mission. I chaired a couple of National Research Council studies for NASA, one on the vulnerability of the Space Shuttle to orbital debris, and the other one on what measurements need to be done robotically on Mars before humans go to Mars. That one was completed just two years ago and apparently is still being of some use to NASA. The name of the report is *Safe on Mars*.

I'm currently on what's called a graybeard panel, an old-guy panel to try to help NASA as they have developed the next-generation reusable launch vehicle, which now is morphing into the Project Constellation, I guess. So even though I professionally don't have a direct relationship with NASA, my ties with NASA are still pretty strong.

ROSS-NAZZAL: I'm glad to hear that you still maintain that contact.

HAUCK: Well, it's good for me, and I hope it's helpful to NASA.

ROSS-NAZZAL: Before I close out today, I just had a couple of general questions for you.

HAUCK: Sure.

ROSS-NAZZAL: When you were working for NASA, is there any point at which you could look back and say, "This was the most challenging milestone for me personally."

HAUCK: I would say it was probably getting ready for the mission that never was, and that was getting ready for the Shuttle Centaur mission, because it's clear that that was going to be a very risky flight. As with any flight, if everything goes well, it's not risky. It's when things start to go wrong that you wonder how close you are to the edge of disaster. And with Shuttle Centaur you're much closer to the edge than in most flights, because this was going to carry the Centaur upper-stage [filled with] liquid oxygen, liquid hydrogen, in a very fragile booster in the cargo bay of the Shuttle.

I think we've talked about, in our previous conversations, that if there were to be a requirement for a return-to-launch site, all of the liquid oxygen and hydrogen would have had to be automatically dumped out of the booster. It's clear that that was, in my view, probably going to be one of the riskiest missions NASA had flown on the Shuttle. It won't ever compare

with STS-1, which, in my view, with all the unknowns, was the riskiest one, but this was going to be one of them.

So that was as demanding a time on me, I think, because the crew, along with George Abbey and the Astronaut Office, were almost like a lone voice in the agency, raising concerns about the risks involved in this mission. And, of course, when the *Challenger* accident happened, eventually Shuttle Centaur was cancelled, which I think we're very fortunate that it was cancelled.

So there was some real soul-searching. Would it have gotten to the point where I would have stood up and said, "This is too unsafe. I'm not going to do it." I don't know, but we were certainly approaching levels of risk that I had not seen before.

ROSS-NAZZAL: By contrast, what do you think has been your most significant accomplishment while working for NASA?

HAUCK: I didn't screw up. [Laughs] I don't know, I just worked very hard and I was very fortunate. I was rewarded by always being given good assignments and working with a good team that answered the mail, I think. I don't know, I think my strength is probably in flying ability, but also perhaps in a leadership role in bringing people together and working through issues, but I can't point to anything in particular.

ROSS-NAZZAL: Is there anything you think we might have overlooked in your previous oral history or today that you wanted to talk about?

HAUCK: No, I think this has been pretty thorough. Obviously we've got reams of files that I could review and go through, but I think we've touched on issues that would be of interest and may be of some significance.

ROSS-NAZZAL: I thank you again for your time.

HAUCK: Thank you.

ROSS-NAZZAL: I enjoyed it.

HAUCK: Thank you very much.

[End of interview]