

**NASA JOHNSON SPACE CENTER ORAL HISTORY PROJECT  
ORAL HISTORY TRANSCRIPT**

JEFFERSON DAVIS HOWELL, JR.  
INTERVIEWED BY JENNIFER ROSS-NAZZAL  
BEE CAVE, TEXAS – 10 JULY 2015

ROSS-NAZZAL: Today is July 10<sup>th</sup>, 2015. This interview with Lieutenant General Jefferson Davis Howell is being conducted in Bee Cave, Texas. The interviewer is Jennifer Ross-Nazzal, assisted by Rebecca Wright. Thanks again for taking some time this morning to meet with us.

HOWELL: Pleasure to be here.

ROSS-NAZZAL: Sure appreciate it.

HOWELL: Great to be alive and in Texas.

ROSS-NAZZAL: As we talked yesterday, you told us that when you were involved with a mission you were always at Mission Control for landing. Tell us about the STS-107 landing and what was going on and what happened that day.

HOWELL: As you know, we'd been doing all these International Space Station assembly missions, but this was unique. It was a scientific mission, great crew, every one of them, as all of them, but this crew, I'd spent more time with them I guess than most. I was finally, after being there a year, getting more familiar with everyone and fell in love with these folks. They were just so good, so sharp, very excited.

They'd taken that laboratory up in the cargo bay, and they divided into two 12-hour shifts, so 24 hours a day they were doing scientific research back in that laboratory, in and out of there from the crew chamber. It was in its own unique orbit, wasn't anywhere around the Space Station, and the flight had been an incredible success. We were getting videos back from them and reports, and they were very excited about a lot of the experiments they were doing, so many of them were coming through with great positive results.

Of course at launch we had some film that showed—it looked like an unusual amount of foam off of the tank that hit, it looked like the belly of the Shuttle. Analysis was done by the experts that we had, and it was determined that we were going to be okay. The crew had been informed about this. They were aware that this had occurred and were given reassurance that everything looked like we were okay. They felt good about that, we all did.

On the last day, they're coming back. Everyone was in very high spirits because it'd been such a great mission, no hiccups at all during the thing. Coming back, it's a Saturday morning, 1<sup>st</sup> of February, and the weather was beautiful. I don't know if you remember. At that time it was just beautiful weather and a beautiful day. Early Saturday morning in Mission Control where I always was for recovery, up in my little cupola with a bunch of the leaders of the Johnson Space Center. John [W.] Young was there, [Ron D.] Dittmore, who had the Shuttle Program, was up there, and the head of engineering, and several others. I think Randy [Brock R.] Stone, who was my Deputy at that time was up there.

It was really laughing and scratching and enjoying the moment because they were coming back. At about 13 minutes to touchdown, when they crossed the West Coast, started getting indications on the floor that something was amiss. Tried to call them to confirm with them and never talked to them again. About two minutes later got a telephone call from outside

saying, “Hey, you better turn on your televisions, people on CNN [Cable News Network] are watching this thing and it’s coming apart.”

I was in disbelief. I just kept waiting for it to be overhead Kennedy [Space Center, Florida] and coming down. Of course it didn’t. A significant moment at that time, Ron Dittmore, who was the Shuttle Program Manager, came over to the telephone there in my cupola, I happened to be standing by it, and he got it to dial his emergency reaction team to get together. He looked up at me and said, “Beak, I was here for *Challenger* [STS-51L], you’ve just started your worst nightmare.” I’ll never forget it. He was right. One of Beak’s Rules is things are never as good or as bad as first reported. This was worse than first reported. This was the exception to that rule; it was just horrible.

I was, looking back on it, very impressed with the way everyone reacted so professionally. Down on the floor, they locked the doors like they do and said, “Don’t destroy any evidence. Maintain all records and keep going.” Dittmore and the Shuttle Program went to work organizing all their emergency reaction teams. I think *Challenger*, which was horrible, was a great lesson for NASA. They weren’t all that well prepared I’m told, for what happened with *Challenger*. They made a lot of mistakes after that catastrophe. Well they were ready this time.

All of NASA, particularly the manned spaceflight [Centers], JSC, Kennedy, Marshall [Space Flight Center, Huntsville, Alabama], and Headquarters [Washington, DC] of NASA, had emergency reaction teams that would go through rehearsals, had their books, page one, do this, page two, and would go through these drills. All those things were called into action immediately, and we started making contact with Headquarters and coordinating what to do next.

Of course the immediate response was, “Can we save the crew? If we can’t save them we need to find them, and then we need to start a recovery of the whole ship.” Of course it was

strewn all the way from west of Fort Worth [Texas] into Louisiana. Immediately at Headquarters, Mr. [Sean] O’Keefe, [NASA Administrator], made some very important decisions to immediately go to the President and ask for FEMA [Federal Emergency Management Agency] to take over the overall operation, which they did. We were key players in it the whole time.

The Astronaut Office, it was emotional but also a professional reaction. “We want to go find our buddies. “ They coordinated. The FBI [Federal Bureau of Investigation] under FEMA goes after remains and investigates deaths. The FBI was put in charge of that recovery process, but the astronauts worked very closely with them. Actually one of the astronauts, I can’t remember who it was, had a program that he had designed on his own personal computer—if this thing comes apart, given the mass of the different things and where it happened, [this is] where certain things will land. He had a prediction that they’re in East Texas. He said, “This is where the bodies will be.” That’s where they focused, and lo and behold, he was dead on, that was amazing how accurate he was and how quickly they found those remains of all the astronauts.

That took several days, maybe a couple—I don’t remember exactly the timeline, but it was very quick, given the situation and given that most of that area was piney woods and almost like a jungle up in East Texas where so much of the ship came down. That was going on.

I’m walking around going to these meetings; I’m told this team is meeting here, this team is meeting there, most of them in the Mission Control Building because it has all those meeting rooms. Everyone knew what they were doing. There were people in charge, and they were going through all the steps that needed to be taken. We were coordinating with NASA Headquarters. I am just an observer. I’m finding out that I’m not really on any of these teams, so what do I do?

I realized that I needed to be thinking above and beyond, what hasn't been taken care of, to make sure things are taken care of. First question. Does the International Space Station crew know about this? No, they didn't. They were in a sleep cycle at that time. I went down to the ISS Mission Control, and they woke up—Ken [Kenneth D.] Bowersox was in command at that time. I told Ken. I had to tell him the news that he lost seven of his best friends. Oh, by the way, we don't have a way of getting you back right now because the Shuttle was the way they came and went. I said, "It's going to be a while. You better account for all your fuel, water, and food. We're going to work this out," which we did very quickly with the Russians and their Soyuz. But they had to make an account right away to make sure that they were going to be able to take care of themselves for the next several months before we could do anything to relieve them. That was my first thing that I did as Center Director.

Then it came time to think about the families who were all in Florida waiting for their husbands and wives to come back. We had escorts. I think you all are aware that after *Challenger* every astronaut that went up had two other astronauts assigned to look after their families while they were gone. They were good friends, and they were pledged to take care of their families. Every one of those families had an astronaut with them in Florida, who had been their escort while their spouses were gone. We made sure we got some NASA birds, the GR4s [Gulfstreams], up there to Kennedy to pick them up, and we brought them all back that Saturday afternoon to Houston.

I guess my next official function was to go out to Ellington [Field, Houston, Texas] and receive them and pay my condolences and make sure they were taken care of. Bill Bailey, who was the local constable there, he had a man with a car assigned to escort each of them back to their homes and to put up a guard to keep people off their yards and keep the people away from

them. We went through that. All this happened seems like about eight o'clock in the morning when all this occurred—I don't remember exactly when it was. By 3:00 that afternoon we had them back in Houston, and we had them going to their homes.

Taking care of those families became a prime goal of mine, became one of my tasks to do. Someone who was also very interested from the very beginning, when I called up to Sean O'Keefe and told him that we've got the families back and we've got them home, and here's what we're doing, he pledged to me, "Hey, we got to take care of them." Said, "Beak, you're personally responsible, but I'll support you any way I can to take care of these families." That became something I did for the next couple years. For that first year I met with them every week. We brought them in, had lunch for them, and gave them briefings on recovery and what was going on, and then when the investigation started what was going on with the investigation.

We helped and supported them throughout that whole time. We went through all the stages of grief and anger and all that as they went through that. It was pretty tough, it was just awful, but they are wonderful people. It was interesting watching how they came through it and the different reactions from different people. Some of the anger was incredible after a month or two. Someone pointed [at] me, "You killed my husband." You got to deal with it. I realized I'd gone through a couple episodes like that in the Marine Corps. As a fighter pilot I'd had to bury some people and look after their families. You understand that they're just in a terrible terrible psychological fix, and you got to help them out.

That was something that became a regular task for me, which was a labor of love frankly, wonderful people, trying to help them and get them through that. I have to once more say Mr. O'Keefe went way out of his way to help them get support. He's the one who got Congress to approve a federal judge coming up with a decision on how much aid and support to give them

and damage for their loss. I think they did very well in that regard because O'Keefe looked after them. God bless him for that.

That Saturday was just constantly talking to Headquarters, seeing what's going on. Decisions were made by the reaction teams that we needed to set up a command post where the wreckage was. Initially Barksdale Air Force Base, there in Louisiana, outside of Shreveport, became the initial central operations center for recovery.

As time went by they moved it into East Texas. I think it was in Paris, but I'm not sure. It was one of those little towns in East Texas where they moved the headquarters. You probably know.

WRIGHT: Lufkin.

ROSS-NAZZAL: Lufkin.

HOWELL: Lufkin, that's right. Throughout the next year, couple years almost, I spent a lot of time traveling up there visiting with them. I was really in no official oversight, but just interest and helping and trying to pat people on the back, see how you're doing. Of course it developed into a huge operation of recovering all those parts. FEMA brought in—I didn't realize that they have a huge team of forest firefighters that are mostly Indian tribes throughout the United States that they bring in to fight forest fires. They brought them in to do the searches. Of course there were a lot of volunteers too, but it was mostly done by professional forest firefighters who were brought in by FEMA to beat the woods through there. Every time they'd come upon a part they'd have to flag it, identify it, mark it with their GPS [Global Positioning System], and then

later on recover it. That process went on for months afterwards as they were trying to piece that thing together.

Of course we ended up piecing it together out at Kennedy in a hangar there and were able to come up with the wing where the damage had been done. It was quite remarkable how much they did recover of that machine, and to my knowledge it's still in that big assembly building there at Kennedy unless they moved it. It was on the sixteenth floor as I recall, where they had it all boxed up, along with the personal items of the astronauts up there too.

Getting back to what's going on in Houston and what I'm doing, it looked like, at the end of the day, we'd done about as much as we could do. The process was ongoing. We were getting organized. I checked in, it seemed like it was around six or seven o'clock in the evening, we'd been going at this all day, but it looked like there was not much more that I could do to help. I checked in with Headquarters with Mr. [William F.] Readdy and Mr. O'Keefe, and it looked like everyone was doing all that they could do.

We knew that we'd bedded down the people. Of course during that day the parking lot at JSC just filled with press, with satellite antennas. The huge throng of news media that just descended upon that place. Our public affairs people took control of that and did a remarkable job I think: handling them, managing them, and trying to give them all the information they needed and wanted without imposing themselves upon the people, the workers and employees there at JSC.

That was a huge undertaking and that went on with press conferences and interviews for weeks after that. They dealt with that, and I think they did a remarkable job. We had the astronauts home. I think "Okay, gang, maybe we can get some rest." Right at that time, late in the day, Sue [Susan H.] Garman, who was my number three deputy, approached me and said,



“Beak, I was here for *Challenger*, and we made a big mistake by not having a memorial service quickly after that. It was several weeks. Our workforce is going to really need to come together and come to closure on this thing in their grief. We need to have a memorial service.”

I said, “You’re right.” [I had] found out in the Marine Corps that you[’ve] got to get through that. I said, “It’s Saturday. Why don’t we have a memorial service here on Tuesday? Let’s have one on Tuesday.” She said, “Fine. [If] it’s okay with you, I’ll take charge of it and organize it.” I said, “Thank you very much. Go for it.” She put out a call for volunteers, and I’m told she got over 1,000 people who responded to help organize that thing.

I realized I’m going to have a memorial service; I better let my boss know. I called Mr. O’Keefe and told him, “Sean, just want to let you know we’re going to have a memorial service here on Tuesday. You’re certainly invited to come down, and I’ll call the other Center Directors if anyone wants to come.”

He said, “Jeff, I’ll be there. Oh, by the way, have you called the President?” I said, “No, sir, I have not called the President.” He said, “Stand by.” About an hour later he called back and said, “President and Mrs. [George W.] Bush have accepted your gracious invitation to attend and participate in the memorial service. You’ll probably be hearing from the Secret Service shortly.” I swear to God the other button on my telephone started flashing at that time. Punch it, it was the Secret Service, and this was Agent So-and-So. “I just wanted to, on behalf of the President, tell you that he appreciates your inviting him to come to this. He’d love to come, and Mrs. Bush. Oh, by the way, we’d like to come see your plan for this memorial service.”

I said, “Well, okay, when are you coming?” He said, “How about tomorrow?” I said, “Okay. Tomorrow noon be here, and we’ll show you our plan.” I called Sue. I said, “Sue, you better have a plan because the Secret Service is coming tomorrow to look at it.” She did.

Back in the campus in that U area, it's a perfect place to do that, and she already had a plan. But she had to put it on a map and draw it out, and she did a remarkable job. Sue is a very talented woman. She had this thing laid out, and I had it on my conference table. I'd seen it. She brought it in at 11:30 that Sunday, and we had it on the conference table. I'm saying, "Hey, this is pretty good." These guys came walking in right at the crack of noon in their dark suits and their earpieces and very polite, serious men. The guy introduced himself and said, "We'd like to see your plan." I said, "Here it is." I'll never forget that moment. He went over, and he looked and looked. Said, "That is an excellent plan." [Rips paper] and said, "Here's how you're going to do it." He had a satellite photo and showed exactly the way we were going to do this.

We had to change the plan. He had to show security places, where they were going to inspect people coming in, and all that stuff had to go on. Of course immediately the word gets out that the President is coming to this thing. Next thing you know the Supreme Court of the United States invites itself, all the leadership of the Congress of the United States wants to come, and we had to organize it, we meaning Sue and her team organized escorts for every heavy that came there.

We had about 72 hours to put through this thing, and they did an incredible job. I'm so proud of them for doing that. How they brought it off. We had every living astronaut who had ever flown in space come to that thing. Local mayors and congressmen and state legislators, anyone who was a heavy had an escort from the Johnson Space Center who brought them in, had them at a reception place, fed them, gave them something to drink, got them to their place to sit, and pulled all that off. It ended up being on national television with a Navy choir. The President spoke, and O'Keefe spoke. It was just a beautiful occasion. It was awful, the situation, but it was just a wonderful [event]. President and Mrs. Bush—of course I went out and greeted them

on behalf of JSC and brought them to the place before they walked them out. They were just so gracious and so very kind and thoughtful.

Something a lot of people don't know. That was on Tuesday. Actually Sunday afternoon, after we'd done this with the Secret Service, we got a call from Daddy Bush, former President [George H. W.] Bush, said, "Hey, you're in a tough situation. I'd like to just come over and grip and grin and pat people on the back. I don't want any press. I don't want anybody to know about this. Barbara and I would like to come over and just say hi to people and say how much we care."

They drove over there Sunday afternoon. Brought them into Mission Control and walked them through and gave them a briefing on what was going on. They spent a couple hours just going around hugging people and patting them on the back saying, "This is a tough situation. But listen, we really care." Mrs. Bush was just wonderful. Janel got to know her on that, walked around with her. That's something a lot of people don't know that went on.

ROSS-NAZZAL: I wasn't aware of that, yes.

HOWELL: He was just marvelous, what a marvelous man. The memorial service was huge for us. It was so very well done. That's a source of great pride for me and respect for our people who did that. Talking to Sue and others, I realized how our people were suffering, terribly suffering. Came to find out that a majority of our 10,000 plus people, because you count all the people who worked around that area, it was about 14,000 people who supported our operation at that time. Everybody, I'd say 99% of the employees, both civil servant and contractor, felt responsible for what had happened, felt like they had done something wrong to hurt those

people. They were just in terrible psychological condition, it was awful. I realized that I had to help them get through that, because within the next several days afterwards we found out we had at least a dozen people who were contemplating suicide, and through friends and family we got them psychological help. We got a team together.

I'm trying to think. We had a woman there who was sort of a counselor under our HR [Human Resources]. She brought in a team, and we made sure we had counseling for all these people who had suicidal thoughts. A more practical immediate concern to me as the head of the Johnson Space Center, [we] had a wave of retirement-eligible people who came in, turned in their papers, said, "I'm leaving. I'm not going to kill anybody else. I can't be a part of this anymore."

I realized very quickly that we were going to lose a significant portion of our workforce, and these are the only people who know how to do this. If we're going to get back into space we've got to hang on to them. I guess the biggest challenge for me as the Johnson Director was to rally them and get them to stay and hang on.

I went about a campaign of getting those people turned around. Basically my battle cry was if we quit now we will be insulting that crew who gave their lives. They would be so disappointed in us if we did not get back into space. If you quit, we're not going to get back into space even half as soon as we thought we would. You've got to hang in there, you got to gut it out. In honor of that fallen crew we've got to get the Shuttle back into space.

I attended meeting after meeting. We have our television, the intra-JSC TV system, and I got on that and talked and talked. Meeting people in the hallway, using the *Roundup*, doing everything we could to rally the troops to hang in there, stay with it. We've got to get this done. We've got to hang in there.

I became a cheerleader to do that. That became a main function for me, to lead the way “Hey, come on.” I basically offered my office to anybody. I said, “Anyone who’s got a personal problem, you think you can’t handle this, come see me personally. I’ll help you. You can lean on me.” That became my battle cry. That became a big issue. I’m glad to say that most of those people stayed and pulled their papers back and did not leave. I’m very proud of them for hanging in there and doing that, because Return to Flight was very tough.

After the memorial service, which was very moving and very well done, came the reality of what had occurred, the situation we were in. The *Columbia* Accident Investigation Board [CAIB] was formed up under Admiral [Harold W.] Gehman. He came to town with his initial crew and ended up expanding that almost fivefold with this huge entourage of experts that he got from all over the United States. We had met when we were on active duty. I knew him from other times, even though we had never served together. He paid a call on me, and he basically said, “Beak, you got to know I’m going to just rake you over the coals. We’re going to cut your guts out on this thing; we’re after you.” I said, “I understand that, that’s your job. Go for it.” They really did. They went for us. We realized that we were going to be raked over the coals.

If you look back on *Challenger*, and I’m not an expert on that because I haven’t studied that, but I was told that NASA resisted the investigation and took issue with a lot of their findings. O’Keefe pulled the leadership together, and he made two very important decisions in my mind. He said, “One, this tragedy, this issue, this problem is not a Johnson, Kennedy, Marshall problem; this is a NASA problem. All of NASA is responsible for what happened in *Columbia*. All of NASA must attend to fixing ourselves.” This was part of his plan for the OneNASA, and that fit in with his trying to get NASA to come together better. He said, “We’re

all going to participate in this recovery process and in this change of the way we do things, if we have to change.”

He said, “Secondly,” and he looked me and several other guys right in the eye, the Shuttle Program and everyone, “we are not going to resist anything the CAIB tells us to do. Every recommendation they give us, instead of saying, ‘Baloney,’ we’re going to comply with it and make it happen.” That was tough. He knew it. He said, “I know this is going to be tough, but this is the way we’re going to react. We’re not going to take them on. We’re going to do everything they tell us to do.”

The CAIB made some very good findings. What happened, they found that out. The culture thing, it was really a slap in the face, because we were so safety-conscious in our own minds. Since I’d been there as a contractor, we had shut down the program on two occasions. One was a wiring problem. We basically shut down the whole fleet for several months while they rewired the Shuttles. Later on while I was the Center Director we had the BSTRA [Ball Strut Tie Rod Assembly] ball thing there in the engines. These little just hairline cracks that we ended up fixing and that set us back two or three months on launching.

We thought we were just as safety-conscious as could be. In my mind, from being a Marine aviator where we really harped on safety, I thought this was the most [safety conscious group]. We used all the DuPont rules and regulations and all that stuff. But they nailed us for our culture and for our arrogance and for the pressure that we put on ourselves for launch, and that all came together, and it all did contribute to what happened, and we had to realize that.

Some of the things that we had to do was to make sure we could inspect the Shuttle while in space. We didn’t have that capability before. Prior to *Columbia* we wouldn’t let anybody on a spacewalk get around the belly of that Shuttle, because if they bumped into it they could do

more damage than just being there looking. We had the Canadian company put an extension on that thing, put a camera on it so you could come around and look. All those things were added afterwards.

We had to have another Shuttle on the pad with a crew ready to go in case they needed to be rescued. All those things were incorporated that we'd never had before. There were just a lot of mechanical fixes on the machine, on the Shuttle itself, on the launchpad. Just enormous engineering effort and a lot of time to go through all that and get that approved and tested and fixed before we got back into space.

While the CAIB was there, they came down to Johnson Space Center and did not really want to be on site, so we got them off site there across the street in one of those office buildings. As they grew, I kept getting requests for engineering assistance, and we ended up with literally hundreds of Johnson Space Center engineers doing investigative work for the CAIB. A lot of people don't realize that, but a lot of the stuff that was found and researched and analyzed was done by our own JSC engineers, both contractor and civil servant.

We also, with the approval of Mr. O'Keefe, did our own independent JSC investigation of the mishap. Randy Stone, who was my Deputy, he ran that thing. We had a huge engineering team investigate every aspect of that flight. Before the CAIB or anyone came up with the findings, we had a roomful of fault trees. They had to hammer out every possibility of what might have happened to cause that. That investigation, the results are somewhere on record, and it was very extensive. I would say more extensive, possibly, than even the CAIB's. But the CAIB did pin down what happened, that foam hitting that leading edge.

They did tests in San Antonio [Texas] at a test laboratory [Southwest Research Laboratory], firing stuff into a piece of carbon-carbon. They got it to crack, and it was at the

same speed that the foam would have been. So it was very conclusive. Then when we finally brought all the parts together and assembled them there in KSC, that area of the wing showed proof positive that there had been an impact and crack on that leading edge, and so it all came together. They were right in that regard.

We made mistakes. We meaning people at JSC, the Shuttle Program, in initial press conferences came out with some bold statements that no, it could not have been foam. That was a big mistake, should never have said that. Poor Ron Dittmore. Ron Dittmore is one of the finest men I've ever met. I thought he was a great Shuttle Manager, but he misspoke. He should not have said what he said because it put him in a very bad light publicly. He ended up leaving, and to this day he's one of my favorite guys. He's just a great guy. God bless him, and that whole team.

If you think about what had occurred, we had to have a change. For anyone to be satisfied, we needed an enema. We needed to get flushed out. That was part of the process of coming out of that.

Mr. O'Keefe, I think another thing he did that was under this rubric of this is a total NASA problem. The CAIB came, they met for about seven months down there, and then they went back to Washington, DC. And they didn't come up with their final findings and recommendations for another five or six months. It was almost a year later, about. You know that better than me probably. During that time they came out with some initial findings and a lot of it had to do with our culture. Sean said, "We need to look into that."

I think another thing he did that was really astute, a good idea, he directed Al [Alphonso V.] Diaz, who was the Goddard [Space Flight] Center Director [Greenbelt, Maryland], to do a survey of all of NASA employees to find out what NASA employees feel about their leadership,



each other, what they do, the institution. He put together a survey that went out, and it went to both civil servant and contractor employees all throughout NASA. When all was said and done, he put this together. Had this huge list of grievances of how people were upset with their bosses and a lot of things. Al sorted it by Center, and he handed the Center Directors these things. I had this huge list. I found out what a jerk I was very quickly, how bad people felt about our work environment, and what was going on and the lack of positive leadership. All these things came out.

After reviewing all that it was very obvious that NASA overall did have a certain amount of arrogance of “We went to the Moon, we know how to do this, so don’t tell us how to do these things.” It came out in the leadership meetings, when young and less experienced people would come up with new ideas, they’d be told to shut up and sit down or get out. There was a lot of this stuff going on. People were cut off short in meetings.

Sean decided to try to fix that, to bring in experts to help us learn how to be better leaders of our employees. They went through a vetting process, and he ended up with BST. Behavioral Science Technology [Inc.] I think is the name of them. It’s a big, very expensive, company of experts on how to manage and lead people. They sent representatives to all the Centers to watch us, to coach us, and to come up with recommendations of how we could do things better, particularly in handling meetings and leading people and taking care of them.

I ended up as the Center Director with a BST fellow who followed me around for a couple weeks just listening and watching what I did and then graded me. Of course then they had surveys too that they put out. Anyone who deals with you, their anonymous stuff, “What kind of guy is this, how does he do, what do you think.” He put all that together, and I still have a book somewhere here, shows here’s what kind of a guy I am.

I'm happy to say, I'm sure I wasn't the only one, but when it was all over, the guy, when he handed me that book, he said, "Honestly, you should have been coaching me instead of me coaching you." That was quite a nice compliment to get from him. But it did point out that some people were—I didn't realize because of my Marine title and my bearing that I intimidated some people because of just the way I am, so I learned some things. It was good.

For me, the flaw in all that—we got a lot of good coaching out of that and we did start doing things better in that regard. Because that was a problem, I'd seen that as a contractor. I told you that, in meetings some of the bullying that went on between the heavies and the lesser people, both civil servant and contractors, and we realized that we needed to fix that. This was a great opportunity—it was a lot of retrospection. People were more willing to say, "Maybe I need to improve the way I do things." To me the biggest flaw was we only did BST with civil servants. We didn't do it with the contractor people.

I went to Sean, and I complained about that. I said, "Sean, after being a contractor and realizing the majority of our workforce are contractors, if we're going to do this BST thing and do it correctly, we need to do it with our contractors too."

He just said, "I don't disagree with you, but I can't do it. I can't afford it." It was a huge amount of money, millions of dollars, to do the survey and all the coaching. He said, "I just don't have the budget to do that."

At that point I said, "Would you allow me to try to involve our contractors in helping fix our culture?" He said, "Go for it." He let me do that. Because of the BST thing and where that was taking us, I got together first with my civil servant leadership, direct reports. We went over this laundry list of grievances and started thinking about what can we do to fix some of this stuff.

There was some resistance. Some people thought it was a bunch of hogwash. Most people realized we needed to do things differently. I offered, "Since most of the work here is done by contractors, and our relationships with them affect all this, and a lot of these grievances, we don't know this, but I imagine a lot of them are from contractor employees, we need to involve them. Would you abide with me if we brought them into this process to help fix this as a team?" They agreed.

I called a meeting. We had over 35 contracts there at JSC. Of course the huge ones were United Space Alliance, Lockheed Martin, Boeing. SAIC was pretty sizable too, but there were a whole bunch of other smaller contractors there. I put out an invitation to meet out at Gilruth. I said, "I want the presidents or vice presidents and nobody else to come. We're going to come and talk about our relationship. I don't want your marketing guy. I don't want your liaison. I want you or your deputy. If neither one of you can come, apparently you're not interested, and so that's okay. We're going to try to hammer this out." Lo and behold, they all show. I had all the presidents. I had the head people.

We got together, and I said, "Okay. We got all these grievances. Here's the problem now. What do you have to say about that?" I tell you. I was in a room with a bunch of angry people, because they thought NASA had just really jacked them around and bullied them and screwed them. There was an outpouring of "you asked, now you let us tell you," and it was quite a comeuppance in that regard.

At the same time when all was said and done I said, "Okay, what are we going to do about it? Here's our opportunity. Here's what I would suggest. I suggest that your leadership and my leadership come together, and let's see if we can't pound some of this out and come up

with some solutions to these issues instead of just bitching about it and being mad at each other. Let's see if we can come together and fix some of this stuff." They agreed.

I said, "Once more, I do not want your marketing person, your liaison, your public affairs. It's either you and me, or we're not going to do it. It's got to be the leadership that hammers this out."

We had an offsite. I'm trying to think of where we did it. It was somewhere up in Houston at one of the resorts. It was at The Woodlands. We spent a long weekend. We brought everybody together. That's when we formed the Joint Leadership Team. That's what we called it. We formed that and initially after meeting and talking about it decided we can't fix all this at once, but let's try to go for the low-hanging fruit and the most important issues. One was leadership. I insisted on that. Most people agreed with me that we are exhibiting poor leadership, and we need to fix that by teaching people how to be better leaders at all levels. We need to address that issue.

Second one was contractor-civil servant relationship. It was horrible, it was awful, and we need to fix that. Third and really came out prominent in this issue was contracts themselves. The contracting process was so huge and every contract that we issued RFPs [Request for Proposals] for, they were all different, and they had all these extraneous things; when you were trying to get a contract you'd have to answer all these questions that didn't pertain to what you were going to do. It was all a bunch of extra unnecessary work that the contractors spent incredible resources having to go through all this drill. Then the review team, the contractor teams that would approve the contract, had to go through all that stuff, and it amounted to a hill of beans on what really you're trying to accomplish with the contract you were letting. We said,

“We need to come up with a better process at doing that.” I’m trying to think. There was one other main issue, and like Governor [James Richard “Rick”] Perry, it escapes me at this time.

We formed teams. Each team had an equal number of contractor leaders and JSC leaders on each team. They got together and started trying to come up with how to resolve these problems. Another thing we wanted to do is make sure that our employees realized we were trying to do this. We built up a team to look after getting the word out to them, “Here’s what’s going on, here’s what we’re trying to do, here’s some of the solutions we’re coming up with. Help us out on this. We’d like your suggestions and input.” That came out of it too.

We started meeting regularly, and we came up with some—one we set up with, I think it was San Jacinto College [Pasadena, Texas], a leadership training course that they put together for us. We started sending managers, both civil servant and contractor, through this leadership course. I don’t know if that process is still ongoing, but we started that.

We came up with more of a template for contracts, a general process that was common so people wouldn’t have to do all this extraneous stuff on how to come through the contract negotiations and RFPs. We came up with a standardization I guess you would say of that process. We realized that there wasn’t a standard process for coming up with engineering proposals that would require dissenting opinions. All too often dissenting opinions were pounded out and cast aside early on. We realized that the decision maker all too often was not aware that there were some people saying, “This is not a good idea.” We had to come up with a standard process where dissenting opinions would have to be a part of the decision making and be presented at all levels before the final decision was made, and that became a standard for all of our engineering projects there at the Johnson Space Center for the Shuttle Program and International Space Station, all the modifications. As those proposals go up the chain, if there’s

someone who has a dissenting opinion on why they think this is a mistake, that had to be part of the process and reviewed by the people who were making the decision. So that became a big deal for us, and I think is very important.

The senior leadership team was meeting regularly and coming out with these things. I think it helped develop more of a team outlook between contractors and civil servants than we had had before. Any time you have fees and scores and you judge people, there's always going to be differences. This helped get through some of that and get more of a team effort going on. I'm very proud of that. I'm told that the senior leadership team is still in process. I hope it just hasn't become a check the block kind of thing like too often bureaucracies become. At that time for the next year or two I must say that's probably a source of great pride to me that we got that thing going. I think it brought about some great change in attitudes, and the way we did things. So that went on.

Back to the big picture, you had the *Columbia* Accident Investigation Board. You had the JSC investigation, which was huge and taking a lot of our talent. They weren't doing anything else anyway, so it gave them something to do, but it was also very important that people dug in. It made people realize that hey, we could have done better. There are some things here we found that we could have engineered things better and maybe kept from making some other mistakes.

The other big dynamic thing going on was Return to Flight. Return to Flight became a huge process and a huge challenge for all of NASA, particularly the human spaceflight Centers. We formed this team to get us through Return to Flight. You had to bring in the CAIB's things, make all those fixes, but then look at other things we saw and go through step by step how are we going to do this. The external tank, and how that was done in Michoud [Assembly Facility,

Louisiana], became a huge issue. Spent a lot of time there looking at what they were doing and making sure that we were doing all we could to do that foam correctly on that external tank.

Found out other things, like the explosive bolts, needed new engineering. There were other things that needed to be done too. The Return to Flight was an ongoing process. All these things were going on simultaneously, concurrently, intertwined as we went forward. The CAIB finally came out with their findings. We realized in black and white here's all the things we're going to do. That became Return to Flight too, getting through all those things, getting that all approved before we went forward and flew. It took us two and a half years before Eileen [M. Collins] and her crew took [*Discovery*] up into space again. That was a tough tough row to hoe.

All that time looking after the families. Of course initially had to go bury all their loved ones and went to all those funerals. Ilan Ramon in Israel, didn't get over there for that. Regret that now, but I had so much going on I couldn't get over to Israel. But went to all the others. We had all kinds of memorials at their different homes and statues and went through all those things and looking after the families. That was part of the ongoing process.

I'm happy to say that I think to a man and a woman they're all very good friends now, and actually were very fond of one another. They're terrific people. For a while there it was really touch and go.

It's interesting as you go through these processes how some who initially were so bitter, so upset, and just felt terrible about everything, hated, there was a lot of hate almost, how they evolved into understanding, loving, caring [people]. Others who initially were, "we understand," later on became bitter. So everybody went through their processes and ended up on the other side a little different from what they started, but that's just part of human nature. It's part of the human way of doing things.

I'm trying to think if there's any other questions about that or what happened.

ROSS-NAZZAL: Did you ask Randy Stone to do that JSC investigation? Or under whose authority did he decide to go ahead and pursue that?

HOWELL: Because it was a national catastrophe, almost every decision we made I went and did "Mother may I" with Mr. [O'Keefe], "Hey, we want to hold our own investigation." He approved it, he said, "I understand that." We were deep into this huge investigation when they came out with the aha moment when they shot that thing in that wing and finally said, "This is it."

That didn't stop our investigation but it basically blunted it a little bit. Our investigation wrapped up not too soon after that, once our people were assured that that's what had occurred. It took the wind out of our sails because they did come up with what happened. Once our people were assured that that's what happened, then our investigation petered out and went away. That's what happened with that.

ROSS-NAZZAL: You mentioned that, of course, Ron Dittmore ended up leaving. How did that change things? He left and then Bill [William W.] Parsons came in as program manager.

HOWELL: I guess Bill Parsons is Steady Eddie. He was on the team. He had been at Kennedy. He had been at Stennis [Space Center, Mississippi]. He was trusted, a quiet solid leader. He brought about a stability, I think, because the Shuttle Program was just in tatters. They were just so shook up. There was a lot of soul-searching. There was a lot of anger there because they



thought they had been doing the right thing, and there was a lot of good people there who were damaged and hurt by what happened in their own reputations. They felt like it wasn't fair what happened to them, because they had done everything in their own minds right, and quite frankly, they had.

But they were tainted because they were in the leadership when all that happened. So they got hammered by the CAIB, because their names were at the top of the list when all that happened. When you go through something like that and you're going to start anew, it's very difficult to do it with the same people, it really is.

It was something nobody really wanted to happen, because you had good people there, but it's something that had to happen. The top leadership had to move, and you had to get other people in there. It's not like they really changed much of anything, except it was just different leadership styles and a rebirth I guess you could say. It's like putting fresh paint on your house. It's the same house, but it looks a lot better and you feel better about it. I don't think really Shuttle Program changed much in the way they did things except they took a harder look at dissenting opinions.

When I first came there, particularly when I was Center Director—because I'm more of a doer than a researcher and engineer—I'm not an engineer, that's probably part of my problem, [I was surprised by] how laborious the engineering process [was] on every project and every little thing that went on there. People would come to my office with a proposal for something. They'd done this work. Here are our options, here's the recommendation on what to do. I would say, "Hey, that looks good, let's do that." They said, "Oh no, oh, we're just showing you what we're doing. We don't want to make a decision now." Engineers just don't like to make decisions. They want to keep engineering. I kept asking Randy and my other Deputy, "Do we

ever get anything done around here? We just engineer things to death and just keep engineering them.” If you let engineers do that they’ll do it, they’ll always find something else that needs to be worked on.

When you find out that we could have done better, then we realized maybe we weren’t engineering as well, maybe we were just going through the act of doing it instead of really doing them seriously. I probably shouldn’t say it, because they were dead serious. It has to do with your attitude, the way you look at things. Particularly with bringing fresh ideas in, I think.

I think that’s what the Shuttle Program did, more than anything, with that shakeup. They realized that this analysis team that we’ve been using for foam strikes, that wasn’t the answer. We had to come up with better analysis on foam hitting. A lot of other processes that had become standard when we have an issue on a Shuttle launch, “Well, Joe is the expert. What do you think, Joe?” and Joe will tell you the answer. “Well, maybe we ought to talk to Pete or Sue too and find out what they think. Let’s get more than one opinion on these things; let’s get fresh looks.” Any difference that we had on doing things, it was bringing in more people to look at things and get fresh looks at how we did things. Did much change? No. Most of what they were doing was good, was excellent.

We found out the risk itself of a Shuttle having a catastrophe. When I first came there I’d [ask], “By the way, what are the chances of a catastrophe?” All the analysis would be it’s 1 in 500, something like that, that something bad will happen on a launch. After *Columbia* and after more analysis, found out it’s more like 1 in 350. I don’t think I’d want to go on an airliner with a 1 in 350 chance that that thing is going to crash or have a terrible catastrophe.

The astronauts, they realized there was a risk. I don’t think they realized how big of a risk. They’re very brave men and women, because that reality came forth, and we realized there

wasn't much else we could do to stymie that risk, given the way that thing is engineered and built, and the way it sits on the side of that external tank.

If you're going to save people's lives in a space program, you've got to give them a way of getting away from a catastrophe, and the way you do that is put them up on the nose, put them up on the top of it. In the Apollo Program and Mercury, they were up on top of that thing, and they had an escape rocket. If something horrible was going to happen—thank God it never did in that regard—they had an escape capability. Shuttle, no way. Shuttle, you are a dead duck. There's no way of getting away from the Shuttle, because they're sitting on the side of that tank, and there's no way of separating that thing from whatever terrible might happen. That was the curse of the Shuttle, the way it was built, the way it was designed. The crew is fallible, the crew cannot get away from it if there's a terrible situation.

We came up with escape solutions, a pole that they could go out. That was all—after flying jets—nonsense, even though it was a nice try. But it was a long shot that anybody could survive trying to escape that thing while it was reentering.

I don't know how I got off on that tangent. There became a new reality that this thing is risky as we thought it was when we started, but then we forgot how risky it was because it became a process and became a standard and we were getting it done. Then came back the realization that every time you go up in this thing you are at high risk of something terrible happening. That reality came back into the Program. That's one reason why it was decided we need to go to something else, even though the Shuttle is a marvel. There's never been any machine like it before or since. What it could do to actually be a launch platform, a spaceship, and then a glider lander, is just remarkable. That is a remarkable thing that was designed and used for over 100 missions.

It's just incredible what they did with that thing, but it was really really a risky thing to use. Every launch was just as risky as the last one. You never reduced that. That's the problem with it. You have that dilemma that you're putting people at very high risk. So is it worth it? That's the thing you got to think about.

Bill Parsons did a great job with his team, and I think [N.] Wayne Hale came in there too and worked, and he was great. Ron Dittmore and his people were great people too. It was just a tough situation. I don't know what else to say about that.

ROSS-NAZZAL: You did mention that there was a decision made to stop flying the Shuttle. President Bush, of course, because of the accident, came out with this new Vision for Space Exploration. Would you talk about that and the impact on JSC after that announcement?

HOWELL: Yes. I thought that was really well timed. I found out later that Mr. O'Keefe and several of his people had a lot of influence on that paper. In that he helped them a lot on that thing, but that was a presidential decision. I got to be a witness. I was actually at NASA Headquarters in the auditorium when President Bush came and gave that speech about how we're going to have this new program called Constellation, and we're going to end up on Mars, probably via the Moon, using Orion. Here's our vision. He came out with this wonderful vision.

Part of that, you realize given the budget constraints you can't keep the Shuttle Program going and then put the resources in for this new thing, so there's going to have to be a tradeoff. You're going to have to bring the Shuttle to a halt. That was part of that decision. I had to go back and be a messenger to our own people whose livelihood depended on the Shuttle and tell them, "Hey, here's what's going on." I was very confident. I said, "We're going to go through

some rough spots. There's going to be friction." I'm an economics major. You have economic friction any time you do a transition from one thing to another. People lose their jobs. Some people gain jobs, but it evolves into something else better is what you're looking for. I said, "It's going to happen here. The same people who got Shuttle into space are going to be the same people who are going to get Orion into space. But the transition is going to be rough on people and we have to understand that. It's going to be a tough row to hoe." People, I think, they had that understanding. "For right now we still got to get the Station built, and we're going to keep launching Shuttles until we do."

That was the immediate thing. I was a big supporter of the President's vision and what he did. Of course not too soon after that, Mr. O'Keefe left to go to LSU [Louisiana State University, Baton Rouge] and that's when Mike [Michael D.] Griffin came in. I had met him earlier, very smart, nice man. We had a nice conversation at a couple conferences. I didn't realize at the time that he had been a pretty longtime NASA employee who really got out of sorts with Dan [Daniel S.] Goldin. God bless Mike Griffin. Dan Goldin was really a handful. I don't have much respect for him. Even though he's a brilliant man, as a person he is a total jerk. When Mike came in, he was an expert on things NASA, things human spaceflight. He had basically written his own *Mein Kampf* on what he would do if he became the NASA Administrator. He had his plan. He had the people in his plan that would help him do this.

When he came in the President gave him his mission, Constellation, and he came in with "Hey, we're going to make this happen, but oh, by the way, I'm going to do it with my team." He cleaned house. I think within the first month of him becoming Administrator most of the heavies in NASA Headquarters who had been O'Keefe hires were gone. Mike just asked them to leave and leave quickly.

For the next several months, Center Directors who O’Keefe had appointed left one at a time. I’m down there doing my job. In about the six month of Mike being there, all of a sudden I got that call where he said—I’ll never forget it. He said, “Beak, you’re the hardest one of all.” I’m sure I wasn’t the only one he said that to. He said, “You’re a great guy. Your people love you and you’re doing a great job, but you got to go. I want to bring my own guy in here, and I want my own team. I’ve got my guy.” It was Mike [Michael L.] Coats, who’s a great guy. He said, “I don’t want to hurt you in this because you don’t deserve that. I’d like you to announce your retirement, and we’ll have a big celebration and retire you with all honors.”

I said, “I’ve looked into this because I’ve been watching what’s going on. Frankly, Mike, I can’t retire, because you got to have five years to be eligible for NASA retirement, and I’ve only been here three and a half years. I’d like to get a retirement pension out of this deal.”

He said, “That’s simple. Tell me where you want to go. I’ll send you there, and we’ll keep you on the payroll until you’re eligible for retirement.” He actually said that.

ROSS-NAZZAL: Oh. Nice guy.

HOWELL: So I looked around and through some contacts and people, interviewed up here at the University of Texas at the LBJ [Lyndon B. Johnson] School [of Public Affairs]. Admiral Bobby [R.] Inman was the acting dean at that time, and he took a liking to me. He said, “Hey, there’s a place for you up here. We’d love to have you come up here and be on the faculty.” I told him I wanted to teach leadership. He said, “We need that. Come on in.” I came up here as a visiting professor actually on the NASA payroll for the next year and a half until I was eligible for

retirement, and then I put in my retirement papers and was hired to be an adjunct professor then for the next five years and taught a class on leadership, not in the graduate school.

They were shocked when they found out I wasn't a PhD. If you're going to be in a graduate school, you got to be a PhD if you're going to be a professor. I ended up teaching on the main campus in a special program called Bridging Disciplines and taught a class on leadership. It was well received. I really enjoyed that very much. I did that for the next five years.

The program had some budgetary problems. I fell in a budget cut. My class went away. So I stayed on as a senior research fellow, nonpaid employee with the Lyndon Johnson School. It gives me an office. I got a lot of plaques, I don't have any other place to put them, and also an e-mail account so I can stay in contact. I'm a guest lecturer at several professors in their classes talking about leadership and crisis management, and the *Columbia* story still resonates with people when you talk about crisis and how do you get through that. I just tell them about my experience. Probably it gives people a reality of what happens when you get into something like that. That's still going on.

Because people have heard me in the graduate school, I started getting invited to speak at conferences and business groups. I've become a regular speaker on leadership. I have about one or two gigs a month that people invite me [to], and I talk to business groups or conferences about leadership and about Beak's Rules. Beak's Rules have become very popular. Two years ago got hired by a company called e.Republic. They focus on IT [Information Technology] management in government, and they run conferences all over the United States for state IT managers. They made me a keynote speaker one year at all of their conferences. I ended up at 24 state capitol conferences, speaking about Beak's Rules and about leadership. Found all these different state

capitols, I didn't even know where they were, then found them. It was interesting. Did that for a year.

They had to get a new speaking head, because they had the same conference every year. That was fun. That was an interesting year. That's what I'm up to. I'm still with the faculty as a senior research fellow, and I still do some of this stuff. That's what I'm about.

ROSS-NAZZAL: Nice affiliation.

HOWELL: Yes they've been very good to me, and I appreciate it. The Lyndon Johnson School is tasked by the governor of Texas to do all of the leadership and management training for state employees and executives. They have an associate dean named Barry Bales who is in charge. He has a team of people. They do leadership instruction for state employees. Barry has brought me in to do a lot of that, to talk about leadership with his classes he does every year. Matter of fact, I'm speaking in San Antonio. He's got a group of state managers that are going to be meeting in San Antonio next week. I'll be over there speaking to them about leadership. I've become a talking head. It's been good. Can't complain.

ROSS-NAZZAL: I did have a couple more questions. I think under your tenure you decided it was important to enlarge the Gilruth. We now have a very large, really nice gym called Beak's Body Shop, got a nice plaque in there. Can you talk about that a little bit?

HOWELL: Yes. I am very proud of that. In my second year, I got a scathing e-mail when I was second year as Center Director from a Kennedy Space Center civil servant who said, "Dear



General Howell, I am really upset with you and JSC. At the Kennedy Space Center we have a gymnasium and workout room that is for all our civil servants. It's free to use. I came here. I went to the Gilruth to that little workout place you have, and I had to pay, I think, 10 bucks to work out. That is not right. Why does Kennedy let me do it for free and you charge me to do it down here? We work for the same government."

I thought that's a good point. I brought my Gilruth people and those folks together, and I asked about that. They said, "We only have this budget, and this is what we have." At that time I initiated. I said, "What can we do? I want you to come up with a design to expand that thing where we can bring all our employees in there and do it at our charge. And oh, by the way, bring in my former contractors, I want it for all employees. Let's make it free for civil servants and contractor employees. Tell me what it would cost to run it and to set it up."

They went through this process. Had all kinds of problems why it couldn't be done. This is after *Columbia*. We'd gotten this Joint Leadership Team. I'd gotten a lot closer. I went out to the contractor guys. I said, "Could you help me on this? We have your employees here. It'd give them an opportunity to have a gymnasium where they can get their physical fitness." Some of them already had programs like that. So they said, "Well, it'd be redundant because we're already bankrolling our people to go to Gold's Gym." Said, "What if I ask for volunteers to help pay for this thing, but I'll bankroll most of it myself?" I actually worked that into our budget, and that's how we came up with this thing.

It was being renovated and put together when I left. Lo and behold, about a year [later] Mike Coats called me and said, "Beak, we'd like you to come down here and help us. We're going to open this thing up, and I'd like you to be part of that ceremony." I didn't realize till I got down there that they named it Beak's Body Shop in my honor. That was nice. That was a

very wonderful gesture by Mike to do that, and I appreciate that, so that's how that came about. I don't know what the process is now, who can work out there and how much it costs. That was my intent at the time.

Once more we talked about budgets, and there's a lot of things you can do to help people around there. Another thing we did, I'm trying to think. Wonderful guy who's been in charge of public works there at JSC forever. You know who I'm talking about? He's in charge of buildings and grounds and sewage.

ROSS-NAZZAL: You're talking about Joel?

HOWELL: Yes. Joel.

WRIGHT: Joel [B.] Walker.

HOWELL: Yes, Joel Walker. What a wonderful guy. It's funny. When I came there as a contractor, just looking around, I said, "This is a beautiful place, but it's unkempt. There's a lot of high grass. Grass growing on the side."

When I became Center Director, I said, "Joel, why don't we make this place nicer?" Said, "It's a matter of money. I don't have the money. Here's my budget." I said, "What would it cost to put flowers in here and to mow the grass better and to trim the sidewalks? In the eyes of most people this is NASA. When they come to the Johnson Space Center they're seeing NASA. We look like a bunch of unkempt vagabonds because our buildings and grounds look like hell. What would it take to fix it up?" He came up with a number. I said, "I'll find that.

Start doing it. I'll get you the money to do that." We started bankrolling. I don't know if that's still going on or not.

Another thing that happened that had to do with that, Janel had something to do with it. I'm trying to remember how it came about. Oh, I know how. There's a gal that was LBJ's secretary who ended up—she died recently but she was living here in Austin [Texas]. I met her. I'm trying to think. [Mary Elizabeth] "Liz" [Sutherland] Carpenter. I found out that we're cousins through marriage, kissing cousins. We ended up getting together at some family occasions and got to know one another. She was quite a character, quite an incredible woman.

At one of these occasions she's talking about [how] she and [Claudia Alta Taylor] "Lady Bird" Johnson were just incredible friends. She was talking about they had the Lady Bird Johnson Wildflower Center. How she's trying to get to spread those flowers around. Said, "That'd be a great thing to have at the Johnson Space Center. We ought to have a plot of ground committed to that. We could get with them." We actually made a liaison with the flower people. They came up to JSC and plotted out what it would take to have—we started that. I don't know if it's still there.

WRIGHT: I think it is by Rocket Park.

HOWELL: Yes. Had a big area there just for wildflowers and just in honor of Texas wildflowers. We got that going. That was just through knowing Liz Carpenter and meeting her and getting to know Lady Bird Johnson before she died. I got to meet her.

WRIGHT: What an honor.

HOWELL: It was an incredible honor. That was another one of those things we did. I know that some people would say that's a waste of money. I don't believe that. I believe that's important for the people who take such pride in NASA and what our accomplishments are that when they see that institution, they should see something that they can be proud of too. They don't want to see a place that's overgrown with weeds and grass and leaves all over the place. I'm pleased that we took care of that. That place looks a lot better.

There's another story. That rocket.

ROSS-NAZZAL: Yes, the Saturn V.

HOWELL: Yes, the Saturn V. When I came there I was so taken aback when I first arrived there and went and walked around, looked at it, and said, "The guys that went to the Moon in those things, that was huge and wonderful." Well, here I am. I guess in my second year, it was after *Columbia*, my second year as the Center Director, I get a phone call from General Jack [R.] Dailey, now the head of Smithsonian [National] Air and Space Museum [Washington, DC]. Said, "Beak." "Yes, sir." "I am calling to tell you that I am taking my Saturn rocket back from you."

I said, "What the heck are you talking about?" He said, "That Saturn rocket belongs to me, and it was loaned to JSC. You have not taken care of it. I've had people go down and look at it, and it looks like C-R-A-P. It's full of birds' nests, it's rotting, and you have not taken care of it so I am going to take it away from you."

I said, "Well, that would be a tragedy and a travesty. So what can I do to change that?" He said, "They've got one down at Kennedy, but they've got it covered. It's in a big building, and they maintain it." I said, "I will do that. Will you let me keep it?" He said, "Put your money where your mouth is." He said he would give me matching funds to look after it. It took us I think \$1.5 million of my money with \$1.5 million of his to one, put that building over it. We built that building, air-conditioned it. Then we came in with the crews that renovated it, cleaned it up. It was really in terrible shape.

That was a space-ready rocket with all the guts in it, all the motors, the modules for the crew. All that was in that thing, and it was just full of birds' nests and crap and had been exposed to that salt air off of Galveston Bay all those years. It took quite a bit of work, but they got it cleaned up. That's how that came about, because I was threatened by the Smithsonian Air and Space Museum that they were going to take it away from me if we didn't do something about it. We took care of that. I'm glad that we did that. I think that's a wonderful piece of history, and I think it belongs right where it is. I guess it's still there being visited.

ROSS-NAZZAL: It's still there.

HOWELL: That's what happened there.

WRIGHT: You weren't going to tell Jack Dailey no, were you?

HOWELL: No. I was not going to do that. I was not going to do that. Not Zorro, that's his call sign, Zorro.

ROSS-NAZZAL: That's funny. Out of all the things that you achieved as Center Director, what do you think was your greatest accomplishment? That last day that you stepped out of the ninth floor and hit the first floor button.

HOWELL: I can't say. I tell you, given what I observed as a contractor, and then what I found when I became the Director, I'm very proud of the Joint Leadership Team and what we tried; to come together to have a better, positive, productive workforce, given that teamwork. That was our idea. I think we made some steps in the right direction. Frankly don't know where that's gone, but I'm very pleased that the people are so wonderful there to this day. That's what I found when I came there. I told you there was this dichotomy of wonderful people but at the same time having issues. I hope that maybe we broke down some of those barriers and got rid of some of those issues. That's very difficult to do in any huge organization and culture. But I like to think that there was some improvement in that regard.

Other than that, that whole thing, to me, was a wonderful episode of my life. I feel so blessed and fortunate that I got to be a part of that. I cannot really take credit for anything really that went on that was better. I just feel very fortunate that I had that opportunity, and I hope that it was worthwhile for the other people around me.

ROSS-NAZZAL: I think this is a good stopping point for us unless you had a question.

WRIGHT: I did have a couple. One is a leadership lesson if you can share with us. When you were talking about that time period where the CAIB was in town, you had the JSC investigation

going on, trying to do our Return to Flight, it wasn't that long after 9/11, the war in the Middle East had started, and now we're having to work on a different level with the Russians because they're having to take [crews to the Station].

HOWELL: Yes. I certainly experienced that change with the Russians. It was quite remarkable. When we started launching astronauts out of Baikonur, I tried to go to every one of the launches. I got to three of them. I think there were four or maybe five while I was Center Director, so I didn't get to all of them, but I went to three, and it was amazing.

The first one I went to was before *Columbia*. I come over there to Russia. First you fly to Moscow and you go out to Star City, where all the training goes on. Used to be a secret base, but that's where our astronauts train with the cosmonauts. They have their own tank and their own mockups and that's where they do their training for space, Star City. You go visit, and their Mission Control is on another outskirt of Moscow across town from there, it's at a different location. You go there.

I was really treated like a big shot, like a big hero, because I'm the JSC Center Director. We had cosmonauts there at JSC training with us, and we were taking them up in Shuttle by this time. It was all love and brotherhood and wonderful, and they treated me like a big dog. You fly down from there. You get on a Russian Space Agency converted Tupolev jet bomber that's now a passenger plane. They fly you down to Baikonur which is about 1,500 miles south of there in Kazakhstan.

You land. It's interesting. You have to go through the Kazakhstan customs and then when you go on to Baikonur you're back into Russia territory. It's really a weird setup. I don't know if you've ever been to Baikonur, but that is a story by itself. It's just incredible. It was a

secret Russian space center. This is where they designed all their rockets that took people into space, this is where they designed their ICBMs [Intercontinental Ballistic Missiles] full of nuclear weapons. It was super secret.

You go there, and it's just desolate like West Texas, hardly any grass grows out there. Wild camels walking through the place there, it's very arid. There is a river that flow through there, but other than that there's no greenery. It's very dry and arid. The people there are Asiatic natives there in Kazakhstan. The Baikonur town itself, it's just this long row of—it looks like barracks but they're big apartment houses. It's just like you find in any communist socialist state, these rows and rows of living quarters where these people live in their apartments, three- and four-story-high, long buildings. There's this avenue that goes.

Finally they built what they saw as a four-star hotel. That's where we stayed at the end of the town there. It was a nice enough place, nice enough hotel, had decent food. There's very little else there in Baikonur. There's a little bit of a city center. They have a flea market. What really made an impression on me, they have a memorial park that is dedicated to all the cosmonauts who've been killed, and there was a lot of them. They lost a lot. They killed a lot of people in their space program that was never publicly known because it was all secret. There are a lot of memorials there. The Russians always have photographs of their dead people on their monuments. These young, very vibrant-looking young people.

But anyway, we get down there. Just like we have at Kennedy, they have the area where they keep the cosmonauts and astronauts who are going up into space. By there they have a walkway that goes down to the river with an oversight over the river, and it's got these trees. It's memorial trees. They planted trees in honor of every cosmonaut who's gone into space; there's a tree there for them all.



Of course Yuri Gagarin's tree is the most revered one there. It's the biggest one because it's the oldest one. He was the first guy to go. They actually had a ceremony, and they planted a tree in my name.

ROSS-NAZZAL: Oh, neat.

HOWELL: The Howell tree. That was a big deal. They had a ceremony. Drink vodka and celebrate and big deal.

We go to the launch; on to Baikonur, the launch site. It's the same launchpad that Gagarin used. They're still launching off that same pad. We attend that. Oh, by the way, when the cosmonauts and our astronaut come out, they get on a bus and they take them down to the launch site where they're going to launch. The big VIPs [Very Important Persons] get in buses and follow them down all the way to the rocket ship, whereas in Kennedy you're not allowed to get within three miles of that thing. We went and stood right outside where they got on the elevators that took them up to the top of that thing. We're standing there. Here's some Russians around smoking cigarettes and here's all this exhaust coming out that's venting. I'm thinking, "I don't know if I want to be here, tell the truth." But I was there. That's a big deal. Then they haul you back.

Another thing, I don't know if you've heard this story, but along the way, it's about a two-mile trek from the suiting out place, the building, to where they go to the pad. Along the way at a certain spot, all the caravan stops. The cosmonauts get off and relieve themselves right there, because that's where Gagarin did that on his first mission. Historically, every time they go

they go do that. I thought that was cool. Of course they told everybody, close the shades on the windows so you don't watch them take a pee on the side of the road there.

That's part of the tradition. The Russians really believe in tradition. You go back to the launch control, and they had a building. Then they got stands there where people can watch. Typical Russians, there's no order to it. People cram in there to get the best spot, push each other aside. For VIPs they had a special place for us. Of course I'm a VIP, and I do that.

After the launch they have the launch, and then you go to a big dinner, celebration. You end up flying back to Moscow that afternoon, and then you go to the control center the next day to watch the marry-up when they got to the Station and docking. You go to their Mission Control and watch that. I have a seat there. It's just, "General Howell this, General Howell that, thank you very much," with translators, yadda yadda yadda.

*Columbia* happens. Now we need their help. O'Keefe, being O'Keefe, plays hardball with the Russians, basically said, "You're going to give us help. We're not going to pay you anything for it. You owe this to us. You're our buddies. You're our partners. We need you to take our people up in the Soyuz and we're not going to pay you any more money for it."

The Russians really got upset with that. The next launch I go to, I'm treated like dirt. Nobody will talk to me. Nobody has anything to do with me, I'm just there with people, get herded around with all the other vassals. When we go down to Baikonur, I went to that grove of trees, my tree is gone. It's disappeared. It all changed after. So that shows you the way the Russians are, arrogant people, I mean B-A-S-T-A-R-D-S. It was such a different change. I go to all those same [places], but I'm just pushed aside, shunted aside. The Shuttle Program people or ISS people, because they're partners with them, they get treated decently.

That was so funny. I went to two more of those, and it was the same mistreatment. It was really funny. I couldn't help but laugh. It was just hilarious the way they are.

Baikonur, you've got to see it to believe it, because it used to be this huge base with thousands of people, and now it's like a ghost town. It's like going out to Silver City out in Nevada. It's just these ruins of buildings and old barracks, the roofs are caving in. Right in the middle of all that they have a couple of buildings where they still put the Soyuz together, marry it up with the rocket, and they have the little train that takes it down the tracks to the thing, and that's all pristine. The Russian [Federal Space] Agency, they're very good at what they do. They've been doing Soyuz for many years and they take care of that.

Of course I've read they've had some problems lately. They lost a rocket not too long ago. In all that desolation and wreckage they built a couple of Shuttle-like [vehicles], the Buran. They flew it one time without a crew, and then when they flew it successfully, brought it back in, put it in a hangar. They were doing repairs to the hangar and they put too much equipment up there and it caved in on top of that thing. That was 20, 30 years ago. When I was out, that place was still there with the roof caved in on the Buran. It was still there underneath the wreckage.

It's funny, a Web site found photographs of the Buran. They finally dug it out, and they had a couple other Buran—almost, they weren't quite totally developed, that they showed photographs of. They are bringing it out now again. At that time they didn't have any money; they were out of money, that was after the collapse of the Soviet Union. That was quite an experience.

I did get to meet some cosmonauts. They're like our astronauts. They're really sharp, wonderful people. Typical Russian, very macho, very in-your-face people, that's just their nature. It was funny.

WRIGHT: Interesting time for a former Marine pilot in the Cold War to be where you were.

HOWELL: Yes.

WRIGHT: When you think of that, it might be hard for you to sum up just one or two. You had so much training that you brought with you that you shared with the employees at JSC and the whole entire JSC community. If you can think back on one lesson or a couple lessons that you hope made an impact on them that you hope they're still using today, what would be a couple of those thoughts?

HOWELL: There are certain principles of leadership that work no matter who you are or what you're doing. As a family member, as a team leader, as a boss of a corporation, as a Marine platoon leader, or a Marine general, these principles really, if you try to apply these in your life, they will help you be a more effective leader. Of course what goes along with that is having the integrity—being a good leader is being an ethical leader, being ethical. There've been some outstanding leaders who were horrible people, Hitler and Stalin, people like that. The other aspect of it is to be an ethical person, speak the truth, and give people respect. All that has to go with it. That's part of it.

Know yourself and seek self-improvement. Know your people and look out for their welfare. Be technically proficient. Know what the heck you're doing. If you're going to lead other people you better know what the hell you're doing.

Those principles, I tried to bring that in with that training that we did, both at SAIC and then later when I was Center Director. I started that training going through our HR Department. We did leadership training, and I would teach those classes. I hope that some of that rubbed off, because those are so important in any aspect of life. They really do work, they really help you and me be better if you try to apply those principles to your life and how you do things. I hope that some of that took hold, because it was wanting. The poor leadership wasn't because of bad people or anything, it was just nobody had ever been taught.

You go to engineering school at the University of Texas, they don't teach you anything about leadership. MIT [Massachusetts Institute of Technology, Cambridge] or anywhere else, you get all these brilliant people, both scientists and engineers, and they can't even lead you to the drugstore. They don't know how. I'm convinced that anyone can become a very effective leader, if they are taught properly and they apply these things.

I hope that that helped some people be better. If you're a better leader everything else goes better in the whole organization. There's a little ray of sunshine there in the middle of the quagmire.

WRIGHT: At least if it's pouring down the leader can help you get out of the rain, right?

HOWELL: Yes.

WRIGHT: Thank you. Jennifer, you have something else that you had?

ROSS-NAZZAL: No, just let us know when you come down to Houston. I'd like to sit in on a class.

HOWELL: Sure. I'd be delighted thanks.

ROSS-NAZZAL: Thank you so much for spending your morning with us. We really appreciate it.

HOWELL: You're welcome. Delighted you could come do this. I feel quite honored to be part of this, because like I tell people, my experience with NASA, I was just a dandelion in the flower bed of life. Given the short time I was there. It was really a remarkable experience.

Any success that I might have had really was because of the people who were my colleagues and I worked with. We had great people there when I got there. At the same time there was the burden of the culture that some people just couldn't shake.

After some people left, I came in with what I think was a really remarkable team. Bob [D.] Cabana became my Deputy, and he had so much to do with the positive aspect of the turnaround of the attitudes there. Bob Cabana is just one of my favorite people. He's just a super super guy. He was such a wonderful Deputy. Wonderful fellow to have there. Randy [K.] Gish became my number three and ran that thing. I'd been impressed with him when he was running contracts down there when I was a contractor. When I had the opportunity to bring him up there, he just did a remarkable job. Those are two of my favorite guys, and I just think they had so much to do with any improvement in attitude, personnel, efficiency, the way we did things, morale. Really Cabana and Gish had a lot to do with that.

One thing that we didn't talk about was Beak's Bash.

ROSS-NAZZAL: Yes, that's right, we didn't talk about that.

HOWELL: In my Marine Corps experience, many years prior in Hawaii when I was an air group commander—an air group is several squadrons under one leader. I had this air group in Hawaii, Kaneohe. It was a combined unit because we had a regiment of Marine ground troops there, so we had the air group and the regiment. It was under a brigade commanding general. Just by circumstances after my first year there our brand-new brigade commander one-star was JR Dailey, Jack Dailey came in.

ROSS-NAZZAL: He keeps popping up in your life.

HOWELL: While we were there, we were under the command of the Pacific Fleet, which was over in Pearl Harbor. That was our overall commander over our commanding general who was a three-star. Fleet Marine Forces Pacific, FMF Pacific—he was over on that Pearl Harbor side at a place called Camp Smith. General Dailey, our brigade commanding general, was under that general, that's the chain of command. We were overall under the Pacific Fleet, who was a four-star admiral, who was over all the Pacific Fleet.

The officers' club at Pearl Harbor every year had a big talent show. It had a Hawaiian name, Janel can remember, aloha wahine or something like that. They would invite the other services, the Army, the Air Force, and the Marines, to come with their officers and their ladies to attend that thing.

The thing was it was a command performance. Not only were you invited, you were required to come on a certain night in your dress uniform and watch this performance. They'd have a dinner and food, and you paid [your] money for all that. Then you would watch this performance, and it was awful. These were young Navy wives and family members and sailors who would practice all year round to put on this big Broadway revue of song and dance.

Maybe I shouldn't say they were awful, but after going to that for about three straight years it was just tiresome. They seemed to be so much more infatuated with themselves and what they were doing, they didn't realize they really weren't that good. Here we are with our brigade commanding general, required to go to this thing. We attend it. At the reception afterwards I approached him with the regimental commander, a fellow named Ron [George R.] Christmas, who's a great American, great hero, got the Navy Cross from Vietnam. He was our regimental commander. We were colleagues.

I told General Dailey. I said, "This is an insult to have to go to this thing, put on a dress uniform, attend this thing. We could do something better than this without even practicing. We can do better than that." Dailey said, "Prove it." So we put together an act. Janel was a ramrod on this. We called it Zorro's Follies. General Dailey's call sign was Zorro. Called it Zorro's Follies. We brought together at Kaneohe Base the brigade, the regiment, and the base personnel. We invited every unit to put on an act. The requirement was it could only be three minutes long, or you will be chased off the stage, and it could not offend anybody, you couldn't do something offensive. It had to be in good taste.

We put this thing together, and the wives put together, and the club put on a dinner before this thing. It was all done by volunteers, and everybody hid their acts. Nobody knew what each of us was going to do.



Of course General Dailey is pimping me. Well, Ron Christmas and I decided to get together and do a pantomime of a Blues Brothers act like they did in *The Blues Brothers*. “(I’m a) Soul Man.” We were practicing that. Two weeks before this thing happens my right knee locks up. I had to go in and have it arthroscopically cleaned up. I’m not in a cast, but my knee is wrapped up, and I can’t do it. I tell Ron, “I’m sorry, buddy, you’re screwed.” “What are we going to do?”

I said, “Well, let’s talk to General Dailey.” General Dailey takes my place to be the Blues Brothers. It’s Christmas and Dailey, and they’ve got two weeks to work this out. They’re practicing, and a week before the thing is going to happen I get a call from General Dailey, said, “Howell, get over here. We need you.” I said, “Sir, my knee.” He said, “I don’t care about your knee, get over here. We’ve been watching this video, and you got a guy playing the guitar who backs them up on it. He has a guitar solo in the middle of this thing. You’re going to be the guy with the guitar.” I said, “But.” He said, “No buts, Howell, you can stand there, and you’re going to be the guitar.”

I started working out with them. We put the show on, and we’re the first act. They open the stage. Here we are out there doing “Soul Man,” and Dailey is dancing around, does a cartwheel, does the whole thing. I’ve got video of the thing. It’s incredible.

A lot of people didn’t realize who it was, because I had a beard. I had to put beard and had a wig on, long hair, and playing a guitar. Christmas and him are dressed up like the Blues Brothers with their black hats. It was a huge success, and at the end of Zorro’s Follies, the very end, “Encore, encore, Blues Brothers!” So we did it a second time.

It was a wonderful event. People had so much fun because we had a huge dinner beforehand, dance afterwards, and people had a grand time. We started that tradition where we

started doing the follies. The next year our new commanding general was George [L.] Cates so we had Cates's Capers and we did that again, and it was a big success.

Here I am at the Johnson Space Center. It's post *Columbia* and we have the chili cook-off, but those are things that had been going [on]. I get with Randy and Copacabana, Bob Cabana, I said, "Why don't we have a talent show? Let's have a talent show. Let's invite all the contractors and everybody to come in and put on a show. Let's have a party. Let's have dinner, then let's have the show and, then we'll have dancing afterwards." That's how we came up with Beak's Bash. We did that, and the first night we did it, I don't know if you remember this, halfway through the dinner, right before we were going to start the stage act, this huge thunderstorm came and just wiped the thing out. It became dangerous. It was one of these thunderstorms that doesn't go away, so it destroyed it.

We did it the next year and got through it the next year, and it was a success. We did it two years while I was there. I still get people talking about that, so I think people had a good time, it was just basically an opportunity for people to kick up their heels, have some fun, and do something different, and have a party while we're at it. That's where that came from, from Zorro.

WRIGHT: That's funny. We've met Jack Dailey, and now I see him in a completely different light.

HOWELL: He's quite something, let me tell you, he can do it all. I just wanted to make the point that any success I had was because of these wonderful people that I served with. They were just terrific. I owe so much to Bob Cabana and Randy Gish and all the other teammates. Jeanie

Carter who became Jeanie Engle. She just did an incredible job. We had some special projects that we had to put together, briefings for Readdy in Washington. She did that stuff. She just worked tirelessly to do that stuff. We just had great people. Gloria Stiner—we were trying to bring more diversity in there. I got Gloria in there and I got Yolanda [Y.] Marshall in there. Trying to get a better outlook of who we were and identify ourselves, and they all just did a terrific job helping. I'm so proud of them. That's my story and I'm sticking to it.

ROSS-NAZZAL: Well, thank you.

HOWELL: You're welcome.

[End of interview]