

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

## **EDITED ORAL HISTORY TRANSCRIPT 4**

J. MILTON HEFLIN, JR.  
INTERVIEWED BY JENNIFER ROSS-NAZZAL  
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ROSS-NAZZAL: Today is October 17, 2017. This interview with Milt Heflin is being conducted for the JSC Oral History Project in Houston, Texas. The interviewer is Jennifer Ross-Nazzal, assisted by Sandra Johnson. Thanks again for coming by, we appreciate it.

HEFLIN: You bet, glad to be here.

ROSS-NAZZAL: I wanted to start by asking you about your appointment as Ombudsman after the [Space Shuttle *Columbia* STS-107] accident. I'm curious how you got that appointment.

HEFLIN: I am, too.

ROSS-NAZZAL: I thought maybe Randy [Brock R. Stone] had some input because he was Deputy [Center Director] at that point.

HEFLIN: Randy?

ROSS-NAZZAL: Randy Stone, yes.

HEFLIN: Oh, well yes, now that you bring him up, there's no doubt. In fact, a sidebar here—rest his soul, we lost Randy a few years ago. I worked with him in Landing and Recovery Division. He came a year after I did, so we were close and played a lot of softball together. Good friend. I like to say his footprints are all over my career path.

He was in my corner a number of times for certain things, when I didn't even know I needed somebody in my corner. Now that you mention it, there's a good chance that he probably [weighed in]. He knew me, he knew how I operated, and that I was very approachable. One of my strengths and maybe sometimes a weakness at times, I was very approachable. I got assigned that by [Center Director] General [Jefferson D. "Beak"] Howell [Jr.].

Of course that was a fallout of the loss of *Columbia* and the crew. If you think back to the two major accidents we had in flight, the [Space Shuttle] *Challenger* [STS-51L] and *Columbia*—if you think about that, there were people who had some concerns about what we were doing at certain times. Possibly they weren't given an audience or heard very well. If somebody's having some problems, regardless of what it was, at the Center here, then the ombudsman would be available to look into it on their behalf.

I was chief of the Flight Director Office at the time, too. I've thought about that, and I've decided that that's probably the roughest part of my career—the time that I served as the chief of the Flight Director Office and as the Ombudsman, primarily because of the Ombudsman thing that I dealt with. I'm trying to think how long I did that. I know it was at least a year, maybe two years, I'm not sure. I think Shannon [W.] Lucid came in after me if I recall in that position.

Somebody would come see me, and basically I had to do as much as I could without writing anything down or keeping notes. Which is impossible, everybody recognizes that. But

it's not something that should be available to anybody at all in the future. It was just me, the person or persons, working incognito.

I think over the period that I did that I had 25 or 26 cases that I dealt with. I had to report to General Howell twice a year, I believe. Best I can remember, about half was about as good as I was able to do with the person or persons in getting to a satisfactory ending of whatever issue they were dealing with. About half. That's not a very good track record, and it bothered me that the other half we weren't able to really get anything done. Very satisfying when we did make something happen, make a change, very satisfying. Very disappointing when we didn't do that.

ROSS-NAZZAL: Can you give an example? I know you didn't have any notes, but can you give an example? Do you feel comfortable sharing an example or two?

HEFLIN: One of the early-on ones was really strange. It had to do with health insurance on the contractor side, a subcontractor.

ROSS-NAZZAL: It's an important issue.

HEFLIN: It's like "Wow, what am I going to do with this?" What I did, Jennifer, that probably helped the most in all the cases, is I coached the person that would come to me. "Let's go do this. I want you to go do this next. I want you to go sit down with so-and-so, tell them this and this, and let's see how that goes."

Most of the time it was suggesting something to them, but I did have to move around the site and do certain things. There were some technical issues. I don't want to get into the details

on any of these, but there were some technical issues that came along. Almost all the time it was the fact that they didn't feel like they were getting enough attention from their superiors or their colleagues to consider what they were concerned about. That was it most of the time.

I had one where there was a chairperson of a weekly meeting, and one of the folks that attended it every week representing their organization was really not happy with the chairperson and the manner in which they went about conducting the business. I had to find out for myself, and I didn't normally attend these meetings. I was chief of the Flight Director Office, but I did not have a need to attend these meetings.

I'm known on the site, and when I walked in and sat down behind the chair a couple rows back, it wasn't too long before the person notices I'm there. I could see a little surprised look. Approached me after the meeting as to why I was there, and I don't like not being truthful, but I couldn't be truthful. I just simply said, "Well, I'm just trying to broaden my knowledge and see what's going on in some of these other panel meetings around the site." I didn't like doing that. It was a period of time wrestling with post-*Columbia* things that went on and doing this. It wasn't much fun.

ROSS-NAZZAL: How much time did it take away from your position as chief of the Flight Director Office?

HEFLIN: Quite frankly, it wasn't much. As far as sitting down and talking, doing something, over that period of time [it took] probably less than 10 percent of my time. But you carry this with you. A person has a problem, you're trying to help them out, and I just couldn't say, "Oh," and walk out the door at 4:30 or 5:00 and forget about it. I'd be churning.

I had maybe 3 or 4 at a time of those 20-some-odd [cases] that I was working with. I did have one case that was really ugly. I asked for and got security up near my office to be available in the very last meeting that I had with the person. I had a security officer next door, who couldn't hear what was going on, but I had ready access to that security officer if I needed it. I was worried, and I was even worried out of work a little bit. Person actually lived in the same subdivision, Oakbrook West, over in Clear Lake City, so I was concerned.

Nothing came of it. That was one that we didn't reach a conclusion, and it was one where I'm convinced that the person really needed help. Tried to guide them over to the Employee Assistance Program, and we never got there. I have no idea [what happened]. We're back in that *Columbia* timeframe. Saw the person off and on onsite. There were no problems, but it made my antennae go up enough to try to keep track of how this person was handling the situation.

ROSS-NAZZAL: You mentioned reporting to General Howell. We interviewed him a few years ago, and he talked about his experience as Center Director and how he was really trying to change things. Did you get a feeling that this position was part of that change at the Center?

HEFLIN: When I saw your list of what we would talk about today, and you mentioned changes, I've been racking my brain to try to remember what changes actually occurred, and I don't remember them. I don't remember what specific changes were made. I know that I really liked the man. Former Marine General, I just liked the way that he conducted himself one-on-one and the way he did in a group of people. He always stood above the fray in my opinion, and he was

very fair, very straightforward. I never had a situation with him that made me concerned in any way. I liked him. He was also fun to be around.

ROSS-NAZZAL: He had some interesting stories to share with us about coming in, and Mr. [George W. S.] Abbey's legacy and trying to turn things around. I think the JLT [Joint Leadership Team] was a big thing that he worked on.

HEFLIN: Is that going to be published here? Is it already?

ROSS-NAZZAL: It's already out there, yes.

HEFLIN: I need to go read that then.

ROSS-NAZZAL: Yes, you have to go and read that. I really enjoyed talking with him.

HEFLIN: I need to go read that, in fact I wish I'd done that before.

ROSS-NAZZAL: Interesting guy. In fact, I think we still need to get his Beak's Rules. Everybody talks about those.

HEFLIN: That's right. I think the very last one is never argue with an idiot or something like that.

ROSS-NAZZAL: That makes sense.

HEFLIN: I think there were five of them. He had a short list. He had like five Beak's Rules. I've used them. In any public speaking I've done, occasionally I have included those along with some of my own thoughts because they were pretty good.

ROSS-NAZZAL: You've got a lot of experience and a lot of good information. One of the things we didn't talk about that I thought we should is the NASA Space Flight Safety Panel. I was curious about what that entailed and what that was.

HEFLIN: That was a really enjoyable experience. Astronaut John [E.] Blaha, I think, was the chairman of that. I'm trying to think, seems to me maybe Hoot [Robert L.] Gibson came along behind him. I served a few years in that if I recall. [There were] representatives from around NASA, around the country. I don't remember the number. It wasn't a large group, maybe a dozen, and that may be too many.

Around the Agency any safety concerns that might be going on, and even at a contractor facility, we would go visit the people. I don't remember the specific things that we dealt with. There was a lot of technical things going on at the time that we'd be briefed on, relative to some of the issues related to turnaround of the Shuttle Orbiters after we had problems in certain areas. We would review some of those things. It was very enjoyable because we were in a listening mode. It was, I would say, easy work. I learned a lot too, just going around the country doing that,

ROSS-NAZZAL: Did things change after *Columbia*? I wasn't sure of the time period that you were on that task force.

HEFLIN: I did that before.

ROSS-NAZZAL: Before, okay.

HEFLIN: Yes, I did that before *Columbia*, I did it back even before I was chief of the Flight Director Office. I might have just begun to be the chief of the Flight Director Office about the time I got assigned to that. I was no longer doing that when we lost *Columbia*. Where were you going with that?

ROSS-NAZZAL: I was just curious about the timeframe because I had seen it on your biographical stuff.

HEFLIN: It was before *Columbia*.

ROSS-NAZZAL: You also were on the NASA Advisory Council Task Force [on International Space Station Operational Readiness].

HEFLIN: I think that's what it's called. Fellow Oklahoman Tom [Thomas P.] Stafford was the chairperson and still is.



ROSS-NAZZAL: I see him around here quite often.

HEFLIN: Yes. I was on that, and I was chief of the Office at the time too. In fact, I think others who've been chief of the Office have served on that as well. This was looking over the shoulders of the [International] Space Station Program and primarily the interface with the Russians at the time—[really] any partners, but it was primarily the Russians. Stafford was the commander of Apollo-Soyuz Test Project, so he already had connections with the Russian community. He was a perfect person to do that. That was a very interesting time to listen to these sorts of things. I gained a lot of respect for other people on the panel and learned a lot about how the Russian program was functioning. That was a good time.

ROSS-NAZZAL: Did you broker any sort of agreements about operations at that point?

HEFLIN: Did not, no, did not. Mostly when it came to something like that, with an issue perhaps in operations, it was very easy for General Stafford to make sure that the right Russian and the right American space people were talking to each other and settling what they needed to work out.

ROSS-NAZZAL: Did you ever have to do that, work with your Russian counterpart?

HEFLIN: No, I did not. I met with their chief of Flight Director Office when I was chief of the Flight Director Office here, [Victor D.] Blagov. Only one time did I meet him. I met him here.

That was basically going through an interpreter, which I hadn't done much of, and that was a learning curve, too. I found it hard just to have a conversation.

ROSS-NAZZAL: I can imagine.

HEFLIN: Yes, I felt like I had to watch very carefully what I said and how I said it. But we only met the one time. I've actually had very little face-to-face interaction with our Russian partners. I've had flight directors in the office that did that all the time. Joel [R.] Montalbano used to work in the office there, and he was one of our main folks that would do that. Bill [William D.] Reeves was very active when I was just a flight director with him in the office. Bill Reeves was very, very active and established a great rapport with his counterparts over in Russia.

ROSS-NAZZAL: In 2004 you became deputy for MOD [Mission Operations Directorate]. How did that opportunity come about?

HEFLIN: I had flunked Building 1 once before. I think we did talk about when I was working for Larry [Lawrence S.] Bourgeois as deputy of the JSC Projects Office, which went away eventually, and then we had the EVA [Extravehicular Activity] Projects Office.

I got invited to come back to Mission Operations as deputy chief of the Flight Director Office, and then served as a flight director. I often tell people that when you're having a good time, a lot of fun, somebody discovers that, and they want to move you somewhere else. It was about time. [A.] Lee Briscoe I think was the deputy director of Mission Operations at that time and he was retiring, so I was asked.

I'm trying to think. Geez, Jennifer, I'm trying to remember who the heck was the director then. I know John [W.] O'Neill [was] before he passed away—John O'Neill and I got along a great deal when he was running Mission Operations. [G.] Allen Flynt came along.

ROSS-NAZZAL: I was trying to find who it was but our phonebooks end [in 1998].

HEFLIN: Allen Flynt came along. By golly, I think Allen was our Director at that time. Randy had already moved on at that time. There was probably another place where Randy had some influence on that. Yes, being deputy anything, it takes a special skill, I think. I think I struggled with that in all my deputy jobs in a way.

Right or wrong, I would go in to the director or the manager, and I think one of the first things I would say is, "I want to help you. I want you to tell me what you want me to focus on." Being sure that I was helping that person implement what they wanted to do in the organization, that's what I went about trying to do.

ROSS-NAZZAL: How much time were you spending on Return to Flight issues? That was the time when we were still working our way towards [STS]-114.

HEFLIN: I felt the best thing I could do is handpick flight directors in the Office at the time to do certain things as they would come up. I spent my time being sure where a flight director could be useful. I worked on seeing that they got there. John [P.] Shannon, I wanted to get him stuck right in as close as I could to be the interface between our office and the investigation committee,

anything that they needed. We had some go up in the Piney Woods of East Texas and spend some time.

Mostly what I did was I went everywhere I could go to sit down and listen to what was happening. Occasionally seeing a little something that maybe we as an Office ought to get involved in or follow up on. I wasn't actively running anything, except being sure that I was running the Flight Director Office in a way that would support all the efforts going on.

ROSS-NAZZAL: Was there anything in particular that jumped out that you thought "MOD ought to become involved in this, we've been overlooked, and we have that expertise"?

HEFLIN: I think the thing that I was most concerned about was, as we returned to flight, how were we going to, in real-time, run the operation in such a way that the flight director did not lose any of their capability to do what they normally do in running a mission. That's a careful way I guess of trying to say I wanted to be sure that the flight director did not have to get in the mode of "Mother may I," which it never had been at that point.

There was a time back in the Gemini, Apollo era as things were happening—there was a time where Gene [Eugene F.] Kranz felt that the Program was getting too much involved in the running real-time operation as we're flying. That got fixed right away. I wanted to be sure that we needed to do what we can to help Return to Flight and help the processes that are going to be put in place in Return to Flight. I just don't want to lose any ability for the flight directors to not be able to do the things they do in real time to get things done. That worked out fine. There wasn't anything I had to do to go sell anybody on this idea.

When we returned to flight, [N.] Wayne Hale [Jr.] did a marvelous job of walking through minefields, I think, in trying to set up a Mission Management Team in real time that would take advantage of all the expertise and collaborate that expertise. Carefully being sure that in doing that, none of that expertise lost the ability to come forward and do what they did. That's a long way I guess of saying the chairman of the Mission Management Team—sometimes they are the boss and sometimes they're not. You don't want to give the chair of that position more capability, again, to in real time get closely involved.

Again this goes back to you got a Mission Management Team which is working with the Engineering, all the contractors, all the NASA organizations, all the customers to be sure we're doing things right. When it comes time [for] that team to decide, "This is the path we're going to go do now. We can't do this anymore, because this is broken, so we're going to go do this." Then let the team go do it.

That worked out fine. Wayne did a marvelous job of coming up with a process that would do that, including the Mission Management Team meeting room, having a round table instead of a rectangular table, where there appears to be a head of the table. I've often wondered, "Was that really working?" at times. I thought it was a great concept to do that, because there was definitely a head of that team.

ROSS-NAZZAL: Yes, I'm sure there was.

HEFLIN: There was. Did you ever sit in on any of those meetings?

ROSS-NAZZAL: I didn't, no.

HEFLIN: That's too bad. You should have done that.

ROSS-NAZZAL: Yes, it would have been interesting. Did you ever feel like there was pressure coming from the investigative team that maybe the flight director shouldn't be as powerful as Chris [Christopher C.] Kraft [Jr.] had set it up to be, so you were butting heads with folks?

HEFLIN: No. I never, never ever believed that there was any threat to that at all. No, really didn't. What I was getting out of the investigation was a bit of a reflection back to what happened to us with *Challenger*. It was somehow or other getting into the position of not paying attention to those that had some really serious concerns about what had happened. Even to this day if you go back—maybe I've already said this, but if you just take those two events and then you take the Apollo fire, in each one of those cases there were things being done or not being done that were being voiced to some form of management and were not listened to.

I felt that the *Columbia* investigation was really trying very hard to see, "Was there some of what happened before with *Challenger* and Apollo," something that still happened with this. My feeling is well, yes, indeed there was. A bit different form, but there was. There were again people very, very concerned in real time, especially about what had hit the wing.

ROSS-NAZZAL: What are your memories of that first Return to Flight? There was still a foam strike on that mission.

HEFLIN: Yes, dang it. Yes, really.

ROSS-NAZZAL: All that work.

HEFLIN: Yes, that wasn't pretty at all for that to happen; that wasn't good. There was certainly a different feeling. We weren't going to overlook that, for sure. Return to Flight, I just never want to go through that [again]—well, I won't probably. All those things, Apollo, *Columbia*, there was always a Return [to Flight], and it's always a big, big struggle to get there. It's always a great moment when you get there, and you do it and do it good. It's a good feeling, but you just don't want to go through that again.

ROSS-NAZZAL: It took a while for us to go back to really being operational because it took another year before we had another Shuttle flight.

HEFLIN: Yes.

ROSS-NAZZAL: Were you involved in any of those efforts to see the next mission go off safely?

HEFLIN: Was that 114?

ROSS-NAZZAL: [STS-]114 was the Return to Flight, and then 121 was the second RTF.

HEFLIN: I'm trying to remember, do you remember what 121 was about? I should have looked it up before I got here.

ROSS-NAZZAL: I should have written it down. I know it was more [of a] test flight, but I don't remember. It's been so long since I reviewed that material.

HEFLIN: Jennifer, nothing stands out to me. While I was chief of the Office and when I was in Mission Operations, we still went about the business of "What's happened to us? What are we going to do about it? What mission rules or what procedures maybe need to be changed or looked at?" It was something that we always did for every flight. In fact, every flight we had we had some issues, most of them minor. You always try to learn from that and just see that we're getting set up for the next flight to take care of that and look ahead.

ROSS-NAZZAL: One thing we didn't talk about was President [George W.] Bush. He had his new Vision for Space Exploration before the first Return to Flight. He announced that we're going to retire the Shuttle, we're going to build Station, we're going to go on to the Moon and Mars. I was curious if you had any role in working on transition plans, because obviously that was going to impact MOD quite a bit. Shuttle we'd been running for almost 30 years, and that was the bread and butter of Operations. Were you involved in the discussions around then?

HEFLIN: I'm trying to think. Deputy MOD—the timing is what I'm thinking about here, trying to make sure.

ROSS-NAZZAL: It was 2004, so I'm not sure when you stepped into MOD. All I have is 2004.



HEFLIN: Probably the best thing for me to say, and it almost sounds trivial, but whatever I had been involved in or was involved in at the time—and I don't recall, wish I could remember when I stepped up to the job working for [Center Director Michael L. "Mike"] Coats. That was probably—I retired in '13, I think I did that for five years roughly.

ROSS-NAZZAL: Yes, I have 2008.

HEFLIN: 2008 sounds about like the right time. So I was deputy of MOD during that period, about four years I guess. Does that sound right?

ROSS-NAZZAL: I have you from 2004 to 2007.

HEFLIN: Oh, gosh. We pick a path and the Agency decides they're going to go this path, and all I can remember about that time is I am simply involved with what Mission Operations is doing to support that. All those standard processes that we go through to do that, I'm in a position where I pay attention to the job we have to do and how we're doing it. "Do we have the right kind of support? What are the issues?"

Nothing stands out to me as being anything like "Boy, that was really hard to get through." It was just all normal business to me. Nothing that I can tell you that I did that I would consider to be a remarkable thing. It was just normal business at the time.

ROSS-NAZZAL: Normal day-to-day things.

HEFLIN: Yes. I'm sorry I can't tell you anything more than that. It was just normal. We flew Shuttle out, had to fly it out safely. I was very close to watching all that till the very end of the Program.

ROSS-NAZZAL: We haven't talked much about [International Space Station] Expedition missions. Quite a few of those flew when you were [deputy] of MOD. The same thing, just the normal processes and things of that nature?

HEFLIN: We had good people in places to be sure that we did it the way we needed to. I won't use the word routine, but by that time we had the process down working with the international [partners], and how we would prepare for each one of these and support each one of these. It was just normal business. There's not anything that comes to mind, Jennifer, that I can share you with you as a profound thing about what we had done during that time.

ROSS-NAZZAL: I did not come up with anything profound myself. I did want to ask you about becoming Associate Director, Technical, and how that came about, and what the role really entails.

HEFLIN: In my opinion, the first person that had that job was John [W.] Young.

ROSS-NAZZAL: I've been thinking about him quite a bit.

HEFLIN: My belief is that George [Abbey] back in those days, I think—and I don't remember the year that was established. I am convinced that [George] had come to the conclusion, as had others, that John was done flying. Probably getting very close to not even flying aircraft anymore, and John deserved to be put in a position where he can still be effective and participate and people could learn from him.

In my opinion, that job was created for John. I don't know how long he held that, but I do know that his job was basically going around to all the major operations and processes and meetings to sit in and listen, and when he thought that there was something that needed to be discussed he'd bring it up.

John retired and left us, actually got out of the job. That job was vacant for a while. I don't remember how long it was vacant, but it was. Mike Coats decided that he wanted to fill the position and I don't know why he asked me, but he asked would I come up there and do that job. "Sure, I'd love to do that." Perhaps you've heard this before. I'm taking John Young's old job, but I can't replace John Young.

I was in this role. I think over time I came to the conclusion—and this probably helped me reach my decision to retire in 2013. I know I've talked to you about when I worked with Larry Bourgeois in the EVA Projects Office. I know I told you that one of the smartest things we did was abolish that office after a year. We discovered that we didn't need that office.

I got to the point where I thought, "I'm just really not [needed]." These folks are being awful nice to me to let me continue doing this job, but I don't think we need it anymore. I'm not even too sure it was needed back then, except for the fact that John was very effective in showing up and speaking his mind back in those days. This was in a period of time when we were going through all these problems with the Return to Flight and Shuttle issues. I don't want

to say we were on autopilot with ISS and post-Shuttle, but it wasn't needed. While I was in it, I struggled a bit from time to time on, "What should I be doing?" I often felt after a week or so it's like, "The company is just not getting much out of me." Seriously.

I would be sure that I was involved in, from a listening standpoint, the major issues around the Center relative to flying [in space]. If we had any safety issues, any technical issues, I could go step into one of the standard meetings either in Engineering or in Mission Ops or in Safety, and just basically try to stay tuned in to any of the significant things. For example, we were still flying Shuttles when I was in this role, and so I was very—active is not the right word. All the preflight, pre-FRR [Flight Readiness Review] meetings that we would have, I would go to those. I would go down to the Cape [Canaveral, Florida] to the FRR, with or without Center Director. Of course Mike or a deputy would go down there as well, represent the Center, but I would always be there. I'd walk up to the table occasionally and whisper in Mike's ear about this or that or something I'd heard. That's what I did.

The way that I can best describe it, and I'm not embarrassed to do it here, is when I was asked what I did I said, "Well, I sat on my butt and I listened." I listened. If there was something I felt I should say, I'd say it. There would be times when I would go to these meetings and I wouldn't have a thing to say, because it just sounds okay to me.

ROSS-NAZZAL: Were there any major issues that you took to Mike Coats and said, "We really need to look at this"?

HEFLIN: No, I can tell you there was not a time I went in to Coats and said, "Mike, boy, we got a real problem here." Maybe—I think it's even on your list here—maybe it's a segue into one of

these topics here. I was concerned about the manner in which the Center was dealing with the Constellation Program.

ROSS-NAZZAL: Oh great, okay.

HEFLIN: Yes. I was concerned there—and I carefully want to word this, because if I'm not careful I'm going to say something [where] somebody could break the code and know exactly who I'm talking about. I don't want to do that. There were a handful of folks that had a different idea of what we should be doing. In other words, they weren't crazy about Constellation. So they weren't as supportive as they could have been to [Program Manager] Jeff [Jeffrey M.] Hanley and the Constellation Program at the time.

I felt like they were really kind of working against him with the ideas that they had. That was the only time I walked in my boss's office, Mike Coats, and closed the door and said, "Hey, we got this going on. I'm really not sure what to do about it, because these are some strong folks." I know Mike mulled it over. It wasn't clear to me that we were effective at that point in being able to stop that or get these folks pointed in a different direction.

ROSS-NAZZAL: Had you worked with Mr. Coats before?

HEFLIN: Only [when] he was a Shuttle commander, and I was a flight director. I worked at least one of his flights, at least one, maybe two.

ROSS-NAZZAL: I was curious about that.

HEFLIN: That was the only way. Mike was very—what you saw was what you got with Mike. Mike was a good man, very solid man.

ROSS-NAZZAL: Since you mentioned Constellation, what are your memories of hearing that it was canceled? What happened that day and the weeks following?

HEFLIN: One of the problems that we've had for the last several years in this business, in my opinion, is that we pick a path and we go down that path for two or three years and then we cancel it. We stop doing it. Constellation isn't the only thing in the Agency projectwise or programwise that's been started, money spent, time spent, and then got canceled.

We had gone a pretty good distance down this old path with Constellation. It's like "Well, here we go again." We just can't seem—we, NASA, the country, Congress—we just can't seem to decide on what we want to go do and do it. It's just irritating. It's just no way to do it. Look where we are today, too, still.

ROSS-NAZZAL: We're no closer to moving anywhere.

HEFLIN: No, we're not, and we have the reestablishment of the [National] Space Council that Vice President [Michael R. "Mike"] Pence is in charge of, which is a good thing. A lot of talk about, "Well, by golly, we're going to go back to the Moon eventually and on to Mars." Show me the money; show me the money.

One of the reasons that Constellation got canned was again, “Well, it’s going to cost this much, we haven’t got that much, and we just can’t do that.” Just disappointing. Where we are today we’re still in my opinion no closer to, “By golly, we’re going to go do this and get it done.”

ROSS-NAZZAL: It’s a challenging time I think for the Agency. Did you play any role when [President] Barack [H.] Obama [II] was transitioning to become President and then moving forward? Did you play any role in that effort here at the Center?

HEFLIN: The only thing I did was I got assigned the job, at the Director level, of being the point man here for the JSC transition plan.

ROSS-NAZZAL: What does that entail?

HEFLIN: It’s a matter of putting together the Johnson Space Center story today. What we’re doing, who’s doing it, how we’re doing it. Every Agency of the government ends up producing this sort of information to take to the presidential transition team. This is basically, “if you want to learn about NASA, here’s what you’re going to read about NASA. If you want to learn about Johnson Space Center, this is what you’re going to read.” It was putting together that package from the last time it had been done, the last presidential transition. There was a template that had been put together. What I did was simply be the point man here at the Johnson Space Center. “Human resources, I need this from you. MOD, I need this from you. Astronaut Office, I need this from you.” Then it would come to me to be put together. That’s what it was.

The Johnson Space Center did not invent something. We had something that was given to us from [NASA] Headquarters [Washington, DC] that had been used before in transition. “Fill in the blanks.” It wasn’t quite that simple. Fill in the blanks, “Who’s in your organization? Who are they, what’s their background?” That was the part I played. Just pulling that together and being sure it got in the right hands at Headquarters.

ROSS-NAZZAL: When we first got together today, we were talking about the most recent storm that hit Houston. While you were in this position we had a pretty significant hurricane hit the Center and do some significant damage. That was Hurricane Ike.

HEFLIN: Ike.

ROSS-NAZZAL: Did you play any role in that recovery?

HEFLIN: Prior to the Center closing down, I simply was, again, on the staff up there. Senior staff would get together daily, [and] all I did was listen. There wasn’t anything that I had to do to make something happen because Johnson Space Center had a plan, when you go to the various categories of the storm, of what to do. So I just followed that.

I evacuated, probably along with some others. When it was time to go, I left Houston with my family. As it turns out we went up towards Central Texas, and we were offered a place to stay by a good friend, so we stayed there. John [H.] Beall, who was the Chief Financial Officer here at the time—we’re very close friends—he and his family also came up there. This was a very nice old farmhouse restored with almost a wraparound porch out there. John and I



had coffee sitting in rocking chairs tied into the JSC teleconference on the mornings that we were away from there, because there was a handful of folks that were still here. So we were tied into that conference each day just listening, because we were a member of senior staff, to what was going on. Hung out there for about three, four days and then came home.

Afterwards, there wasn't anything that I was doing or had to go do except just pay attention to what the Center was doing getting recovered from that. This is like "sit on your butt and listen" again. I'm serious. There wasn't anything I did except just pay attention to how we were getting back up, and pay a lot of close attention to the control center, and how we were getting back in operation.

Again, in that job as Associate Director, Technical, I felt like I was a mobile eyes and ears for the Center Director, Mike Coats. I was just basically very active in focusing on anything that had to do with either safety or technical or operations that might be an issue on his behalf, and reporting to him on daily tag-ups if there was something going on.

ROSS-NAZZAL: There was a move under Coats to start commercializing space. We had the Commercial Orbital Transportation [Services]. Were you involved in watching over some of that and reporting back to Coats in those endeavors?

HEFLIN: Sorry this isn't very exciting, but it's repetitive. Clearly, again, it was following how the Center was reacting to the issue or whatever Coats wanted to have done during that time. It was a matter of finding, "Okay, who's doing what, who's thinking about this, where can I go to again be his eyes and ears sitting in listening to what people are thinking about."

As we were beginning to stand up a system here to where we were going to be more involved with the commercial side, “How are we going to do that?” I would sit in on meetings with folks who’d been picked. “How are we going to go about doing this? How are we going to transition to where we can be effective in helping the commercial outfits that are interested in getting involved? How can we help them? What do we need to do on the government side to help, to try to not get in the way?” Again, it was just a matter of going around and listening to how we were setting up these organizations. Saying, “Well, looks pretty good to me.”

ROSS-NAZZAL: Was there a lot of pushback from people at the Center?

HEFLIN: Oh, I think there was not hard pushback, I don’t think, but a lot of concern, a lot of concern. I still pay attention to how this is going, and the real challenge is how can you take what we feel in our heart and soul is really important in doing this business and trying to convince a commercial outfit that they really ought to do this. “You really ought to add some more redundancy to this over here. This is a hazardous thing.”

I think the challenge has been how can you go do that without [cutting corners]. They want to have a business. They want to make money. They want to be able to thrive in this. How can the things that we hold near and dear to our heart—when it comes to protecting hardware and people—how can we be sure that they can do some of those same things without breaking their bank? That’s a real challenge today, I think, to do that.

To say that some think we’re too—safety conscious is probably not the right term to use, because that really sounds bad. I’m thinking that’s really what they think sometimes, too.

“Well, we’re too much risk-averse in this kind of business, and you really can’t do that.”  
Where’s the happy medium? Where’s the point?

I even struggled with that before I retired as we were bringing on more commercial things. [Take the] the Russians, for example. It took us a while before I think we got comfortable with not feeling the need to have every piece of information about them and how they’re doing business. We tried to get that at the beginning. With our spacecraft we’ll know down to the bolt and nut what happened. We kind of thought we needed to know that much from the Russians to begin with, but they weren’t going to give that to us. There was a learning curve. We had to be satisfied that what they told us to do, and how they’re going to do it and what they’ve done. We had to accept that. I’m thinking it’s working pretty good. They’re no dummies.

That’s what I think the commercial folks are going to—they recognize [it], too. A commercial outfit can’t kill somebody. They’re going to go out of business, right? So where do they draw the line on this? It’s a real difficult thing to deal with between the government side of the space business over the years and what we’ve done, and how to marry that with the commercial side. How to give them enough room where we’re not holding them down so much, but we want to be sure that they don’t do something that’s just going to ruin their business, too. It’s an awkward way of explaining it or telling you that, but I still think that’s a hard thing to do today.

ROSS-NAZZAL: One of the other things I wanted to ask you about was the fact that JSC, we had seen some budget cuts. So there was a big push to open up the Center for business, and partner

with other educational institutes and business and industry. Can you talk about that some from your perspective?

HEFLIN: I have to ask you, how's that going? Do you know how that's going?

ROSS-NAZZAL: As far as I know, it's going well. I had a recent interview with [Center Director] Dr. [Ellen] Ochoa and she talked a lot about the partnerships and the different Space Act Agreements.

HEFLIN: I don't know.

ROSS-NAZZAL: I was curious though from your time period, what your perspective was on all of that.

HEFLIN: I was really glad to see that. I was really glad to see us reach out and try to make that happen. I got excited the first time—I guess we brought some organization here onsite if I recall. I can't think of the name of it now, but I thought that was great to be able to do that. The more we could reach out and the more we could get the commercial sector to be involved, that's great.

If Ellen says it's going strong, I wouldn't doubt what she says. And I'm glad to hear that, because that's I think really very important.

ROSS-NAZZAL: Did you play any role in trying to broker any of those types of partnerships?

HEFLIN: I worked with John [R.] Saiz quite a lot in some of the outreach that he was doing with other Centers. He had a group back then that was dealing with some high-tech technology advancements. It was kind of a strange marriage we had there. I ended up being his supervisor when I was the Associate Director for Technical. He had to work for somebody, so they assigned him to me. John was very energetic in this arena of outreach when it came to trying to get in other technical areas.

My involvement was to cheerlead for him and have weekly tag-ups with him. He'd tell me what progress they're having and what they're doing. But nothing beyond that, because John knew what he wanted to do and had the energy to do that, it was just a matter of me supporting him and cheerleading for him.

ROSS-NAZZAL: Did you have any role in the Chilean miners [Copiapó mining accident] effort here at JSC?

HEFLIN: I had no role in that at all except it brought tears to my eyes what they were doing. I thought that was just super. I thought that was great. It's too bad that we can't do more of that sort of thing, which helps get the word out about some of the things we're involved in in this business. No, that was great though, it was really super.

ROSS-NAZZAL: There's a book out actually about that effort.

HEFLIN: There is, okay.

ROSS-NAZZAL: Yes, and I think they used a few of our interviews that we did. We had a few interviews about that.

HEFLIN: Cool, that was really great.

ROSS-NAZZAL: Did you go out to [U. S. Army] White Sands [Missile Range] and see the Orion [Crew Exploration Vehicle] Pad Abort [1]?

HEFLIN: I did.

ROSS-NAZZAL: Do you want to talk about that? It's kind of a big moment.

HEFLIN: Before Constellation went under, I had the privilege of hanging out with those folks on Pad Abort 1. What was the launch at the Cape called with the booster that we had down there?

ROSS-NAZZAL: EFT-1 [Exploration Flight Test 1]?

HEFLIN: Yes. It was EFT-1, right?

ROSS-NAZZAL: That was in 2014. Was there another one that [I] missed?

HEFLIN: Oh, it wasn't EFT-1 because that was the one that—

ROSS-NAZZAL: That was heavy-lift [Delta-IV Heavy launch vehicle].

HEFLIN: Yes. Anyway, back to the pad abort. Yes, I was out there for that, and that was at White Sands. Then I was invited to go out for the solid rocket booster test out in Nevada, the first stage solid rocket booster test. [I] got to go out for that as well. Nothing beats going to the launch site of something that you're involved in. It's just absolutely great to be there present, to be there seeing it happen in real time. That was another case for me of seeing something coming down on a parachute, which was what I got to see back in the Apollo days. That was a lot of fun, just great to be there. Nothing beats being there when you can see the fire and smoke and hear it.

ROSS-NAZZAL: I imagine.

HEFLIN: I was there just representing Director's Office, I was just there almost as a tourist.

ROSS-NAZZAL: Did you see many Shuttle launches, or were you always in Building 30?

HEFLIN: No. Only Shuttle launch that I saw was [when] the class of '83 flight directors, which I was a member of, went down for a launch. And I can't tell you which one it was. I only saw one launch. [I] take it back—one in person, and then I did see the very last launch [STS-135] in person, too. I had my family down there. I had my wife and sons and our grandkids and went down there. Not only did I get to see the launch, I came back and was on the runway for the landing, which was great, too. So I saw two launches and then one Shuttle landing.

ROSS-NAZZAL: Special memories, I'm sure, especially that last mission.

HEFLIN: Oh boy, yes. I knew what the airspeed was, and I've seen it once. I knew all that. It's coming in, but this was a predawn landing, too. It was right about dawn, but it was still dark. Of course the runway was lit up with all those lights. The viewing area we were in—about the middle of the runway if I recall—you couldn't pick it up because it was dark. It doesn't have headlights on it, so when you knew it was there you began to hear it. Began to hear the auxiliary power units and their exhaust, and moving through the wind, you could hear that moving through the air.

When it got in sight at the viewing area and you saw it, it was like zoom. It was down that runway like "Holy cow." Because that's the first time you see it in person, and as it goes by you—you don't appreciate the speed that you see on television. It doesn't have the same effect at all, no.

ROSS-NAZZAL: What were your feelings knowing that this was it? We weren't going to be flying Shuttles anymore.

HEFLIN: People asked me that before. It didn't hit me. Honestly it wasn't like, "Oh, man." It just really didn't dawn on me until much much later. I can't tell you when that was that it hit me. I wish I could remember. The commentator in Mission Control at the time, Rob [Robert A.] Navias. I can't remember what he said, but it's worth listening to again. What he said at wheel stop, the comment that he made, was—



ROSS-NAZZAL: Yes, I do remember that.

HEFLIN: Really, really right on, spot-on, what he said. I can't remember what he said, but it was perfect. I got to admit, at that time just hearing that, it's like it really—"Oh," really kind of struck me. But then Sun rises, we get out there on the runway, walking around. And walking underneath it, and looking at it, and meeting the crew when they got out. It didn't quite hit me till much later.

I look back on that, and of course you've heard me talk about that before. The fact that I was there for that, and I was also present at the last Apollo splashdown. I'm the only person on the planet that was at both of those. That's what I really feel good about, very special.

ROSS-NAZZAL: Very unique, yes.

HEFLIN: Yes, and to be at the splashdown point for [EM]-1 [Exploration Mission 1] in my little consulting role. I'm going to try very hard.

ROSS-NAZZAL: Oh, for EM-1?

HEFLIN: Yes, I am. Yes, I am. They still have me on the payroll, so we'll see.

ROSS-NAZZAL: We'll have to have you come back and talk about that. We talked a little bit about Constellation, and there was one small part of Constellation that survived, and that was Orion, the MPCV [Multi-Purpose Crew Vehicle]. Do you remember that day that [NASA

Administrator] Charlie [Charles F.] Bolden [Jr.] made the announcement that we were going to continue with Orion?

HEFLIN: I do remember him making the announcement. I think I was already on board that it was going to happen anyway. I don't think I ever had the feeling that it wasn't. It's really been *déjà vu* for me. You can just imagine. It's Apollo-shaped—it's a larger Apollo, had parachutes, lands in the water. I've been there, done that. It was good that we were doing that, but at the very same time what's out there hasn't quite been defined yet, and what we're going to do with it. That's not good, that's very disappointing.

ROSS-NAZZAL: When you were in this role, we renamed Building 30 for Chris Kraft. I figured you were probably pretty involved in that decision.

HEFLIN: Jennifer, it'd be hard for me to list my top experiences working for 47 years in this business, but that one—it may be in the top 5, I don't know. Mike Coats called me in and asked me would I take care of getting that done. It all started, bless his heart, with [former Flight Director] Glynn [S.] Lunney. Glynn Lunney showed up on Mike's doorstep a week or so before Mike called me in. Walked in there and closed the door, and said to Mike Coats, "We need to rename Building 30 after Chris Kraft."

ROSS-NAZZAL: Oh, bless his heart.

HEFLIN: So Mike called me in and asked me if I'd go make it happen. I said, "Well, can you tell me how?" Jokingly. So I was the point man here to work with Headquarters. I can't even tell you who all I worked with. It wasn't a whole lot of people, but it's a process you go through. It got approved through the right approval process in DC.

Then it was just a matter of deciding, "Okay, we got to get a sign made; we just got to get the whole thing set up." I was basically the project engineer for getting the sign made, getting the sign put up there, arranging for the day that we did the dedication, setting up the dedication plans, the folks who were going to talk. I got to do all that, and that was really, really, really great. It was a lot of fun, very special to do that. It's interesting that somehow or other I had thought about, "Okay, as people are gathering we need to have some music." Have I told you about this?

ROSS-NAZZAL: No.

HEFLIN: "We need to have some recorded music." At the time I didn't say recorded. "We need to have some music as we're just gathering, and we'll have all the chairs out there." Did you see the event?

ROSS-NAZZAL: I did. I attended.

HEFLIN: So you saw how we were set up out there. With the group that was working with me, Public Affairs and Center Ops and so forth—I wish I could remember the young lady's name—we decided we'd have some recorded music. It'd be easier. I was asked, "What would you

like?” I thought about it for a little bit, and I said, “I want some John Philip Sousa marches. That’s what I want.”

She looked at me like a deer caught in the headlights and she said, “Who is that?”

I looked back at her and I said, “It’s definite. I want some John Philip Sousa music.”

There’s a handful of folks here that handle all the outdoor PA [public address] system. I call them the JSC sound mafia. I’ve done that for years. At John Young’s going away at Space Center Houston they dressed up like the mafia.

One of the guys there said, “I can get you some John Philip Sousa.”

I said, “Okay, that’s what I want, I want a CD [compact disc] or whatever we can stick in there.” By golly, we had John Philip Sousa music. Proud of that, loved it. That was a good time. Kranz talked, Lunney talked. Of course [Kraft’s wife] Betty Anne and Dr. Kraft were there, and I really enjoyed what he said. It was fun.

ROSS-NAZZAL: Did you get to tell Dr. Kraft that you were naming that building after him? Or who got that honor?

HEFLIN: I did not tell him. I’m not sure who did. It might have come from Mike Coats, but I don’t know. I don’t know. We were pretty quiet about it for a while. We wanted to get close in to it.

Interesting to decide the size of the sign—that was a little bit more difficult than I thought it was going to be. We didn’t want it to be too big, didn’t want it to be too small. We had several artists’ renderings of what it would look like. A handful of us would stand around and look at it and decide.

ROSS-NAZZAL: That's pretty cool.

HEFLIN: That was a great time. To be able to be a part of honoring that guy is cool.

ROSS-NAZZAL: He impacted your life in so many ways.

HEFLIN: Oh, yes.

ROSS-NAZZAL: I wanted to ask a little bit about Dr. Ochoa. Mike Coats ended up leaving to take care of his wife, so you worked for a very short time for her.

HEFLIN: I did. Ellen is in my opinion very thoughtful, very careful, I think, with what she says. It doesn't mean others were not. I like both of them. They're both really good people, nice people to work with and be around. I think she was a little more cautious than Mike was when it came to deciding on things to do. There's nothing wrong with that. Just that I think she took a little bit more time, which didn't bother me.

I don't know what else I can say. I like her. I had no difficulty in communicating with her, nor did she with me.

ROSS-NAZZAL: She rolled out something called JSC 2.0. Were you involved in that whole decision?

HEFLIN: No, I was not, but I got a kick out of that, because I thought, “Well, we ought to be a lot further down the road than 2.0.” No, I had nothing to do with that.

ROSS-NAZZAL: I was curious about that.

HEFLIN: I’ll be honest, I’m not crazy about it either. I’m not crazy about the 2.0, mainly because I’m thinking we should be further down the line. It was almost like when it came out, 2.0, it’s like, “Oh, man, we should be at 8-point-something now,” or I don’t know.

ROSS-NAZZAL: There have been iterations since then.

HEFLIN: I know. In fact, today I was invited to come out and speak at—was it the 20<sup>th</sup> anniversary of the NBL [Neutral Buoyancy Laboratory]? Twentieth?

ROSS-NAZZAL: I think so, because I think it [opened in] ’97.

HEFLIN: I gave a very short talk and I brought up—I can’t remember them maybe there were [three] things listed.

ROSS-NAZZAL: I think so, yes, they’ve got the stickers around campus.

HEFLIN: [Accelerate mission, advance commercialization, and do things differently.] So I saw that, and it struck me as being “That’s okay, as long as we change what needs to be changed.”

The point I made at the NBL was, “You folks out here have got an outstanding safety record,” and they do. The NBL in my opinion when I was here, and even today, the NBL is the most hazardous thing at the Johnson Space Center that’s done day in and day out. They have a tremendous safety record out there. I said, “I see that you’ve got some ideals today you need to live up to, and one of them is making changes.” I said, “You don’t need to change anything that you’re doing out here safetywise, because you’re doing great.”

The point I was trying to make to them—and that’s the thing that got me about the latest little motto or whatever it is we’ve got at the Center is. Be careful in making your changes that you don’t do something that you don’t need to be doing that’s working well.

ROSS-NAZZAL: Did that happen to you over your career, where a change was made and it really didn’t need to be made?

HEFLIN: Oh, probably. But my goodness, I’m not sure I would even know. Yes, I suspect so. But I don’t know that one stands out right now.

ROSS-NAZZAL: You decided to retire just a couple of months after Ellen had taken the helm, on March 1<sup>st</sup> of 2013. You said that you got tired of sitting around. Was there any reason for that particular date? I know some people like to retire on a specific date.

HEFLIN: Oh goodness, let me see. I guarantee you there wasn’t a thing that happened to me that said, “Oh, that’s it.” That didn’t happen. I knew Mike was retiring, and there was going to be a change. I was already well on my way to just deciding to do it.

Why it happened then, no, I don't know. I don't know, it just happened. One day I woke up I guess, and I'm thinking, "By golly, I think I can go ahead and do this now." Jennifer, I think that one of the things that probably ate at me the most as my career was ending was I missed the last—let's see. That's right, STS-135 was 2011. I retired in 2013. Over that two-year period I sensed—and it was me—I sensed that the Center had lost what I will call "battle rhythm." I think that ate at me more during the two-year period, because from the time I showed up here in '66 until 2011 there was a battle rhythm.

Now there was a space between the end of the Apollo era and Shuttle, but there was a battle rhythm going on because Shuttle wasn't going away. We had to get ready; we were going to fly in '78 or so. We didn't do it, we did the Approach and Landing Test in '77, and it took us a while to get to '81. But there was a battle rhythm, and by that I mean we were always as a human spaceflight organization finishing up a flight, getting ready for the next flight, launching.

We weren't launching them anymore; we were done. For me internally, the way I went about thinking and being around this organization was I enjoyed the battle rhythm, I enjoyed, "Man, we got to get going, got to keep going, going, get this done." I guess somehow or other when Mike left and Ellen took over, the Center was changing, and the battle rhythm, for me, wasn't there.

At least when the battle rhythm was there—in this weird job I had as the Associate Director, Technical—in that weird job that I had, there was always something going on. Something was continuing to go on was the daily operations of Station and occasional launches of Soyuzes and Progresses. But I didn't feel that battle rhythm, so it just came.



ROSS-NAZZAL: Did you plan to go work for a contractor? You thought you were just going to retire?

HEFLIN: No, I didn't plan to. I had no plans. I hadn't ever done this before. "I'm going to need a little time to see what's going on here."

I did leave knowing that I had this little gig while I was here working for NASA. I was going down to the Cape periodically and working with the folks, ground ops for water recovery of Orion. I'd already started that when I was here. When I was Associate Director, Technical, I went down to the Cape. Let's see. I went down to the Cape—I can't remember the exact time. When they were standing up their organization to have a landing and recovery-type organization like we had in Apollo, I had got word of that and made some phone calls and ended up going down there with two other folks who had retired who had worked in Apollo landing and recovery with me.

The three of us went down there and spent a couple days briefing them and telling them, "This is what we did in Apollo; this is how we did it." So I already had a connection. When I retired from here I knew I had the connection, and I already knew in my mind, "I'm going to see what I can do to be able to hang around a little bit longer in a consultant role," and by golly if it didn't happen.

ROSS-NAZZAL: How long were you out of work before you became a consultant?

HEFLIN: Let's see. It was like in July and August that I began to start actively pursuing with the NASA side down at [NASA] KSC [Kennedy Space Center, Florida] on a possibility of doing something like that. As I talked to them, said, "Oh, we'd love to have you."

I think SAIC [Science Applications International Corp.] was the first company that would hire me to do that. For a year I could not be seen. In the position I was in as an SES [Senior Executive Service] and the job that I had as government employee, I could not be seen or heard from to the government side.

Inside that one year I ended up getting a consulting job. Basically I would tune in to conferences on behalf of the KSC team down there to listen, and go back to my SAIC counterpart and provide some information to get back to the team. I just couldn't be seen or heard for a year, so I did that.

I basically got tuned in to the major conferences that they had that I could listen to. They knew this.

ROSS-NAZZAL: Yes, those were the rules.

HEFLIN: Those were the rules, yes, so I did that. Then the contract changed hands. The ground ops contract got taken over by Millennium Engineering [and Integration Company]. When that happened they wanted to go out and use one of their subcontractors. So today I'm paid by Red Canyon [Engineering and] Software, Denver, Colorado. Small company.

ROSS-NAZZAL: What sort of things are you working on? You said that they were setting up a landing and recovery-type division.

HEFLIN: I was very active with them in preparing for some of their testing and development of their procedures and hardware for EFT-1 recovery. I was invited to go out to sea off of San Diego—they spent a week out there testing the procedures. I was invited to come back for the EFT-1 recovery itself on the same ship.

Leading up to that, I would tune in from home to the weekly team meetings. There'd be other meetings going on. I basically spent my time at home tied into teleconferences. Made a trip or two down to Kennedy Space Center paid by the company I work for to attend. This is when they could see me and hear me, when it was legal. I would go down.

I went down a couple times to do that on some of their major meetings, including one time walking into [KSC] Center Director Bob [Robert D.] Cabana's office with a couple of other guys to brief him on something. Bob really got a kick out of that, because of course I worked very closely with Bob as a flight director when he was a CapCom [capsule communicator] on console, when he was a commander in the Shuttle.

What's really interesting is there was a big meeting here up on the ninth floor [of Building 1] for Orion, and I had a chair. In the chair was my name, and it said KSC. So I'm really a KSC-badged person right now as a consulting role. Bob Cabana gets a real kick out of the fact that I'm a KSC employee.

ROSS-NAZZAL: What are your memories of recovery for EFT-1?

HEFLIN: Oh, I had prepared, I had sent out a note—we have an Apollo recovery website and distribution list for emails. We keep in touch. I had sent out to the alumni of the Apollo

recovery I was going to be on this boat. “If you want to say anything, write something down, I can read to the people. What’s your feelings about this?” I put together a one-pager of comments from people that have done this in the past, congratulating them on what they’re doing now, wishing them well. So I got to give that to the team the evening before the EFT-1 recovery when we were out at sea.

While I’m doing that, the next morning before dawn we’re all gathered in the chapel on the ship. That was the biggest place we could [meet], in the chapel. We’re getting the briefing for the splashdown, giving our final briefing, getting ready. I remembered that in Apollo—just like in Shuttle—Apollo creates a double sonic boom like the Shuttle did. We could hear that during the Apollo days, the bow on an aircraft carrier. You could hear the double sonic boom. Of course to us that was an announcement that it’s coming.

I just remembered that, so last thing I said to the team was, “Guys, I want to tell you something, and you probably ought to know this. There’s a possibility that you may hear a real loud boom, maybe two booms, a double sonic boom. That’s okay.” Sure enough, we had a double sonic boom when this thing showed up. Had I not told them that, I guarantee you they would have immediately thought something bad had happened.

Heard that, we were spot on target. I’m looking and looking and it’s like, “Holy cow.” I’m looking at three billowing parachutes. It’s like, “I’ve seen this before.” It’s like Yogi [Lawrence P. Berra] said, “*déjà vu* all over again.”

ROSS-NAZZAL: I hope you get to see EM-1.

HEFLIN: Oh yes, that’d be cool.

ROSS-NAZZAL: Think that would be exciting.

HEFLIN: Actually that'd be cool, and it'd be cool to be there for—well, will I be alive when we put people on this thing and flies? EM-2?

ROSS-NAZZAL: We'll see what the date is.

HEFLIN: Yes.

ROSS-NAZZAL: Do you spend much time coming out to the Center talking to co-ops [cooperative education students] or being involved with public affairs?

HEFLIN: Interesting, I haven't done that in quite a while. I really miss giving tours of the old MCC [Mission Control Center] but I understand what's going on there too. I tell you what. It waters the eyes to see what the city of Webster is doing moneywise, and the fact that that kick-starter campaign they had at Space Center Houston [JSC Visitor Center, Houston, Texas] went way over their goal in raising money. I think I sat down and looked at the number of contributors to the starter campaign, and the masthead that the average donation was like \$108 or something. "Now that's grass roots. That's really cool."

Gene Kranz had a regular speaking engagement with a group. It's called Road Scholar, but it's not what you're thinking. It's an organization that is from the University of Texas [Austin, Texas] where grandparents and grandkids get together and tour around the country, and

one of the places they come to is Houston, the Johnson Space Center. They've done this in the past. They go down to Galveston [Island].

Kranz was their usual person to meet them at Space Center Houston and talk to them. He couldn't make it this year. It was way before the storm [Hurricane Harvey], he wasn't able to make it. He called me and asked me if I'd do it on his behalf, and I said, "Sure, I'd be glad to." So I did it twice this year. These were grandkids of grandparents. It was really a great audience. Really cool, I got to do that.

I have been invited by Human Resources, just got the note the other day from Human Resources. They've invited me to come enter for a thing called a [Fresh] Start. It's something that the Center is doing in November out at the Gilruth Center [JSC recreational center].

All of this year's new employees are going to get together and Ellen is going to talk, senior staff is going to be there on a question-and-answer thing. I've been invited to be one of the founding fathers and give a little talk for about 45 minutes. That's trying to answer your question.

No, I haven't been out in a while, but I'm getting the chance to come back out and do that, which will be fun. I look forward to that. George Abbey has asked me to go down to Rice [University, Houston, Texas] here in November too, to moderate a panel involving the medical aspects of space and some of our past medical staff that have been involved are going to be on the panel. He's trying to get an astronaut or two. Walt [R. Walter] Cunningham was going to come but can't make it now. Both of those things are going to be fun.

ROSS-NAZZAL: Yes, you keep busy.

HEFLIN: It'll be fun, yes.

ROSS-NAZZAL: As you look back over all your years here, what do you think is your most significant accomplishment? What are you most proud of?

HEFLIN: Interesting question. I had an occasion to think about this, not this question, but think about something the other day. It caused me to have this thought. I think the thing that I take away the most that I really appreciate is—this is going to sound kind of bad, but I left actually having only one person that I associated with in my career that I, to this day, cannot stand. I'm serious.

ROSS-NAZZAL: That's pretty good, yes.

HEFLIN: I'm talking I really can't. There's only one that just still to this day I can't stand—only one.

Beyond that, I really got a kick out of, and feel like the contributions that I was able to participate in in the Apollo Program on the recovery ships—being remote and showing up someplace as a mid-20s age person and being given the authority I was given to get things done is something I really did appreciate and feel was an accomplishment.

Clearly, I think my biggest contribution from a flight operations standpoint is lead flight director on the very first Hubble [Space Telescope] repair and being able to enable the team to do what they did. I feel really, really good about that for sure.

I'm really pleased that when I got to select a flight director class, I am thrilled that it came out this way. I got to select the first African American, I had three Hispanics, I had two ladies. The most diverse flight director class ever. To be not just part of that, but that was my selection. I feel good about that, too.

ROSS-NAZZAL: You've had a great career. I wonder if there's anything else that you wanted to talk about today or that we haven't covered over these past few sessions.

HEFLIN: Oh gosh, Jennifer, I have no idea. No, I don't. I always walk out of here saying, "Oh, man, stumbled over that and did that."

ROSS-NAZZAL: I've never thought that when you left.

HEFLIN: It's tough. When I saw your list here, it's like "Ah."

ROSS-NAZZAL: I think you did fine.

HEFLIN: Yes, I'm impressed with that, and that brought back some memories, too. I'm anxious for this place to get a real battle rhythm again. I really am. It just breaks my heart, and I don't think there is one here.

ROSS-NAZZAL: We'll see what happens when and if we get a new Administrator.



HEFLIN: Yes.

[End of interview]