

## ORAL HISTORY 4 TRANSCRIPT

RICHARD S. JOHNSTON  
INTERVIEWED BY SUMMER CHICK BERGEN  
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BERGEN: This is December 2, 1998. This oral history, with Richard Johnston, is being conducted at the offices of the Signal Corporation, in Houston, Texas, for the Johnson Space Center Oral History Project. The interviewer is Summer Chick Bergen, assisted by Kevin Rusnak and Franklin Tarazona.

Thank you for coming again. Let's talk about Skylab today. When did you first begin your involvement with Skylab?

JOHNSTON: Well, let's see. I was working in the Apollo Program office, and [Robert R.] Gilruth and [Christopher C.] Kraft [Jr.] called me up one day, asked me if I would come over and get the hardware straightened out, and I said, "Yeah, I'll be happy to do that." So I went up and went to work, but I said, "If I do, I don't expect Chuck [Charles A.] Berry to get involved with telling me what to do." And they said, "Okay, you do what you need to do." I said, "Okay."

So I went up there and I fired a couple of people, removed them. I brought John Stunseifer [phonetic] and Bill Hufsteiler [phonetic] and Bill Bush [phonetic] in, plus some other people, and we got busy and we got that hardware straightened out. In fact, we set up a chamber run for about fifty-six days to test all of it, and that's how we worked all the problems out with it.

BERGEN: Was that the SMEAT [Skylab Medical Experiments Altitude Test] project?

JOHNSTON: The SMEAT. It was a very successful test.

BERGEN: Did you help in the development of that test?

JOHNSTON: Yes. We thought that if we were going to fly all that equipment, we ought to run a ground test with it, at the same pressure they were going to fly at. And so we had three crewmen. It was—oh, let's see. [Robert L.] Crippen, [Karol J.] Bobko, and a guy, oh God, I can't think of his name now [William E. Thornton]. He's a doctor. Anyhow, we had the three of them in there, and we were in a fifty-six-day chamber run, and we found some problems. Some were hardware and some of the procedures, and whatever, and it was a very successful program.

As I say, it lasted two months, but we worked out a lot of stuff, a lot of problems with the hardware and procedures and whatever. Frankly, as a result of that, our medical experiments for the flight program were very successful. The test went very well, went very well. Who was that other doctor? I can't think of his name. He flew in the Shuttle. But anyhow, the test went fine.

BERGEN: How did those astronauts who had to—

JOHNSTON: They did fine. The one guy was a doctor, and I can't think of his name. I'll think of it. Anyhow, he was kind of a whiner, but the rest of them were fine, and we had a good test. I remember when the test was over, he came out, his wife wasn't there, I thought he was going to cry, but it was a good test.

BERGEN: What were some specific problems that you discovered, that you were able to fix?

JOHNSTON: Some of the hardware didn't work right, so we had to get it moved out, and some of the procedures weren't right. Communications weren't what they should have been. You know, it was a good test. I think without it, we would never have had the success we did with the flight program. And most of the medical things we did, you know, allowed us to do things that we were going to do in flight, and I think it was the precursor of the flight program and hardware we were going to fly. And it was a very successful test.

In fact, you know, we put together a report on the thing, and it was about that thick. I've got a hardbound copy of it at home. It was a good test. We had a meeting every morning, and talked about what went on the day before and whatever.

BERGEN: How did you monitor that test? Did you have people there twenty-four hours a day, monitoring?

JOHNSTON: Yeah, there were people there twenty-four hours a day, and I used to go out there in the evenings and the morning, and at night. It was a good test. It was a good test. One of the funny things, the first day, we were having a meeting, and I used to smoke a pipe back then, and I lit my pipe up and I put all the alarms off in the building. Oh, boy.

BERGEN: Why don't you tell us a little bit about the medical experiments that [were conducted on Skylab].

JOHNSTON: Okay. Well, in Skylab, we had quite an array of experiments, and we had a lot of outside experimenters, plus people working in NASA. We had a thing called a lower-body negative pressure thing, which, people got in and we checked their—well, we ran it at different levels, okay, and we were able to measure their blood pressure, heart rate, whatever, and so that was an interesting thing, because it gave us a good way of comparing how the

crew performed on Earth versus how they did in flight. And we took their blood pressure and heart rate and several other things.

Then we had a bicycle ergometer, and we hooked them up to a machine where we fed them oxygen and kept track of how their metabolic rate was going. We had a sleep experiment, that they wore EEG [Electroencephalogram] electrodes at night. That was very successful. Let me think of some of the other things. We took blood samples, took urine samples. I'm trying to think of some of the other things we did. I should have brought my book. But we did a lot of things, just a lot of things, and Skylab was a very successful program. The worse thing about Skylab was, after they launched it, one side of it came off, and we didn't think we were going to save it, but we did.

BERGEN: Were you involved in any of those decisions?

JOHNSTON: Yes, I was at the Cape and the thing went up and the one side came off, and I got a call from Kraft, saying, "Get on the Gulfstream in an hour and get back up here." So we all got back and we all pulled together, and, you know, we went ahead and got alternate food to take up and oxygen masks. The guys that were in crew systems, where I used to work, worked with the shop and they designed the cover they put on the outside.

I think, really, in like about fourteen or fifteen days, we launched again, and Pete [Charles C.] Conrad [Jr.] and Joe [Joseph P.] Kerwin went out and put this thing up and it provided cover from the sun and whatever. It was a very successful mission, it really was. There was a lot of science done in that. It was a great mission, it really was. I never understood why the side of the thing came off. I don't think anybody ever did, but then the next mission, they built another gadget that they—I think they put it out from the inside, and that stayed on through the next two missions.

But Skylab was a great program, it really was. I know after it was over with, I told the people working for me, I said, "You all stand by, because we're going to put a book out." And I guess in about three months, we summarized all of our findings and published a book and had a big conference. I think we were the first science program that successfully did that.

Also, in the Apollo Program, I went to work in there for Chuck Berry. Chuck left and went to headquarters. The astronauts used to always complain to me that nobody ever published the results of their flights. So I got all the medical people together and I said, "Look, you know, we do all these things to these astronauts and we never write a report." So I said, "You guys stand by. We're going to put a book out on the medical results of Apollo." And we did. I guess the medical results of Apollo and the medical results of Skylab, I'm the principal editor on them. It was a great experience for me.

I had a lot of different jobs at JSC [Johnson Space Center], and I enjoyed them. I remember after the Apollo fire, Gilruth called me over one day and talked to me and he said, "I really need somebody to come up here as my special assistant. Would you be willing to do that?"

I said, "Would you let me think about that?" So I'm talking to my wife and I said, "You know, the old man wants me to come up there and be his special assistant. I don't know that I really want to do it, but if he wants me to, I'll do it."

So I went up there as his special assistant, and I was there about four, five, six months, and he said, "The lunar receiving lab's in trouble. Would you go in and straighten it out?" So I went and did it. He moved me around a lot of different places. I did a lot of different things throughout the center.

Well, I'm getting away from Skylab. Anyhow, we flew two other missions. One of them was fifty-six days and the other one we flew for, I think, eight-four days. They were

very successful. I don't know what I can tell you. We did bone studies and all sorts of studies on the guys, in flight and once they got back.

BERGEN: Did you have people that monitored them throughout the flight?

JOHNSTON: Oh, yeah. Yes, yes. We had a meeting every morning over at the [mission] control center. Berry had sent some people down from headquarters to sit in on all of our meetings, and it really irritated me. So I called him one day and I said, "Chuck, I don't know what the hell you want, but you just tell me what you want and we'll have you a packet of data in the mail, but now get these people the hell out of my office." So he said, "Okay." So they left.

I had a guy working for GE [General Electric Company] who I got in, and I said, "Now look, I want to tell you what your job is. Your job is going to be to pull together all the data from the previous day, put it in an envelope, and mail it up to Dr. Berry." And we did, every day. Every day. Bar none.

Chuck and I were good friends, but yet I didn't like the way he did things. I mean, he was never there. He was always running around giving a speech. I remember I went over there and went to work for him, and then he moved to headquarters. I was there for about seven or eight months, and they never appointed anybody in his job. So he came in one Christmas to clean his office out, so I went in to his secretary, I said, "Look, I want to see Dr. Berry."

She said, "Well, he's very—"

I said, "Do you hear what I'm telling you? When he's off that phone, I want you to cut the phone off. I'm going in to see him."

She said, "Well, yes, sir."

I said, "Well, you heard me. If you like your job, you better do what I'm telling you."

So I went in and talked to him. I said, "Chuck, you know, you walked out of here and left this place in a hell of a mess. I've gotten it straightened out, but I don't know who you trained to take your job. What doctor do you have working for you you'd put in your job?" And I said, "I'll tell you. None." And then I said, "What doctor outside would you bring in to take your job? I don't think you'd bring anybody in. I think you're stuck with me."

So he says, "Well, I've talked to the National Academy about you."

I said, "I know you have and they talked about you, too." But I said, "You're stuck with me."

So I ended up running all the medical stuff for the last nine years over there, and it was a very interesting life. Chuck and I are still good friends. I really probably shouldn't be talking about all of this on this thing, but I did.

BERGEN: If we go back to some of the Skylab experiments, do you have some unusual results from some of those experiments, some things that surprised you?

JOHNSTON: Not really. I'm trying to think. The lower-body negative pressure, that ended up the way we thought it would. People working out on the ergometer, that worked out the way we thought it would. The sleep experiment worked out the way we thought it would. The blood tests, they were all like we thought they would be. I'm trying to think of anything that really went different than we thought. The bone calcium loss was not as bad as we thought it would be, and one reason was, we had them exercising. In fact, I've got a copy of the medical results of Skylab. I'll bring it over and give it to you.

But it was a very successful program, it really was, and we had a big conference and went through all those results, and it was very well received. We had the whole auditorium full of medical people. I think it was a two-day conference, and it was just a great experience for me.

BERGEN: How does Skylab compare to the medical experiments you'd been able to do in earlier programs?

JOHNSTON: The things we did in Skylab were much more well planned and executed. We did things in Gemini, but Gemini was such a small spacecraft that we really weren't able to do an awful lot. Apollo, our prime mission was to go to the Moon, not to do medical experiments. We did some, but it was not like it was in Skylab. Skylab, you know, that was a big laboratory, and we were doing Earth resources. I'm trying to think of other things they did, but there was a whole bevy of things that they were doing, and the medical things were just one part of it. It was an exciting program to work on, it really was.

I remember, in the last mission, one of the crewmen threw up a day or two after they got up there, and they left a mike on, and it came back this guy had thrown up. Chris Kraft got livid, so he called me, he said, "I want you out at the control center in about fifteen minutes."

I said, "Okay, I'll be there." So I go out there and he's got Deke [Donald K.] Slayton and Al [Alan B.] Shepard [Jr.]—both of them are dead now—and he said, "Look, I don't want those guys doing what they're doing. Now, Al, I want you on the capcom. I want you to tell those guys I don't want anything like that ever to happen again while they're up there." Well, he got on the line and told them. And the funny thing about it, if the guys hadn't had their mikes on, there wouldn't have been any problem, but it came back on the radio, on television.

Chris Kraft was a—I like Chris, but he at times can be a real pain in the neck, is the only way I can put it. I thought he was a bit severe about that. But I work for him, what the hell can I do? I think it could have been handled a lot better than it was, but that's the way Chris wanted to do it, and that's the way Chris did it.



BERGEN: There were some other controversies, especially during the first one, about what would be said on the open loop and what could be downloaded on the private—talking to the doctors. Were you involved in any of those decisions?

JOHNSTON: Yes.

BERGEN: What's your opinion on it?

JOHNSTON: Well, you know, the guys who are on the medical consoles work for me, and there was some bad friction between the medical people and the flight directors in the capcoms. I really was kind of the guy that tried to smooth all that out. The doctors always wanted more information than the crew was willing to pass down. So, consequently, there was always a lot of friction between the medical people in the medical console, the flight director, and the capcom. It seemed like they always had a battle going on, and I was always in the middle of trying to straighten the damn thing out, and none of the three of them were right.

You know, the medical doctor, I think, had a perfect right to want to know some of the medical information. Nothing wrong with that. But the astronaut on the capcom, he didn't want to ask him and the flight director didn't want him to ask him. So it was rather a difficult thing, okay. And I was in the middle of it, and, you know, I felt sorry for the astronauts up there and I felt sorry for the medical people. I don't know. I tried to help straighten it out. I don't know that I did, but it was straightened out.

I talked to Kraft about it and then I talked to [Eugene F.] Kranz about it, and I talked to several people, and I said, "Look, you guys have got to let up a little bit and let the doctors

be willing to have some questions asked. I mean, you just can't leave them up there and not ask questions. How in the hell are we going to know what they're doing?"

So it smoothed out after a while, but it was kind of bitter for a while between the doctors, the flight director, and the capcom, and, frankly, a lot of the other flight controllers. Sitting in the control center with the doctors was a real experience. They had them off to the side. No one particularly liked having them there, yet they were needed. They were as integral a part of that control center team as anybody, but they weren't respected, you know, and that's wrong. That was wrong. That's all I can say. You know, we were flying a medical mission, we were flying a science mission, we were flying lots of different kinds of missions, but the health of the astronauts is very important, and I think the doctors had a right to be willing to ask and find out how the crew was doing. Well, the flight directors and capcoms didn't want to do that. So, I don't know.

It was a strange period in my life. I enjoyed it, because, you know, hell, I was in the middle of it and I understood what was bothering the flight directors and the capcom and I understood what was bothering the medical doctors. I don't know why they just couldn't have sat down and worked it out, but they didn't, and it just didn't work.

BERGEN: In one of your earlier interviews, you discussed a testing procedure that was planned for the astronauts when they returned from the second Skylab mission, that you said you were opposed to. You talked about this procedure that you tested out and you actually stopped somebody's heart, at one time. Do you recall that?

JOHNSTON: No, offhand I don't. I mean, you know, we had worked out procedures for pre-flight testing, post-flight testing, and so on, and we really didn't deviate from those. Now, some of the astronauts didn't like some of the things they did, but, you know, if they were going to fly, they had to do what the hell they were supposed to do.

Most of the astronauts who flew in Skylab ended up good friends of mine, and we didn't really force them to do anything that they shouldn't have done, and I've never, ever felt, you know, any responsibility, any sadness on my part, toward what we did and what they had to do. I mean, we were trying to do what the hell was right for the program. And, you know, I'm not a medical person. I'm really a chemist by training, but I ended up running the medical programs, and so I had to learn a lot about the medical aspects of it, and I did. I did. And I primarily learned it when I took over when Berry left.

The Apollo—you know, they had manuals written for what they were going to do. Well, hell, they never revised those from mission to mission, so one of the missions, I took the thing home and I started reading through it. It was terrible. So I got the whole damn crew together in a conference room and I just chewed their butts. I said, "I can't believe you all have got what you've got here. If I were the center director, I'd fire you." So I said, "You get your butts back over there, and in a week I want a revision of this thing." Chuck walked in, and I said, "Chuck, have you ever read this?" And he said, "No." I said, "I didn't think you had. This is terrible. I mean, it's awful. I don't blame the astronauts for being mad at you guys." So we revised it, and every mission thereafter, we had another thing that re-did what we were going to do and defined it, and we went about it and we did it.

I guess going to work over in the medical thing was—Gilruth did a good thing by putting me in there. There was a guy named [A.] Duane Catterson, who was Chuck's deputy, and they were thinking about putting him in Chuck's job, and I went up and told Gilruth, I said, "If you're going to put Catterson in there, I'll stay around and handle the hardware, but I couldn't work for him." Well, he left shortly thereafter.

I was always pleased that I had that job, and I had a lot of opportunities as a result of being in that job. You know, I went to Russia a couple times, and I was involved in the meetings with the Soviets. It was just a great experience, it really was. I wouldn't have traded those years of my life for anything. I really wouldn't. In fact, my whole career with

NASA was fabulous. I had more opportunities. It was like going to work in a candy shop. It really was. And, you know, if you're willing to grab hold of things and do them, you'll succeed.

So anyhow, I don't mean to go back through my whole career. I went to work in the space task group back in 1959. There were maybe sixty people there. And, man, I'm telling you, every time I turned around, I had an opportunity to take on something else, and I took on—I started off with the environmental control system and then nobody was taking care of spacesuits, nobody was taking care of medical instrumentation, nobody was taking care of the animal program. I just took all those things on and I ended up building a branch.

I worked for a guy named Stan [Stanley C.] White, a doctor. They called me in one day and they said, "We've got these doctors and nobody knows how to run them." So I said, "Well, I'll do it." So we set a branch up. That branch grew into what is now the Crew Systems Division, and we did a lot of things in that division. We weren't afraid to take on any job that came up, any job. Now, I don't mean to go back through all that. You don't know my history.

BERGEN: You mentioned you had an opportunity to go to Russia. Did you work on the Apollo-Soyuz Project?

JOHNSTON: No, no. I'll tell you what. They had a working group in space medicine with the Soviets, that Chuck Berry and some other people had started, and when Chuck left, then I got in the middle of it. After Skylab was over, we went over to—can't think of the name of it, but it was down in the southeast corner of Russia, and we had a conference down there with them, and we presented all our results. It was a nice meeting, it really was. And I got to know a lot of the Soviets real well, really did. We had a good meeting down there, really did, and I really enjoyed it, I did. Really enjoyed it.

Then they would come over here, and I would entertain them in my home and take them downtown, and I've done a lot things with them. Then another time I went over to Leningrad with them. The first time I went over there, we came back into Moscow, then we went out to the airport. I was the last one in line, so I come up to this guy, and I had a bunch of Russian money. I said, "I've got this Russian money. What am I supposed to do with it?" He says, "Go back over there." So I go back over and I said to this young lady, I said, "I've got this Russian money. I know I'm not supposed—" She said, "Put it back in your pocket and go get in line."

Well, now, by now, all the guys I'm traveling with have disappeared. You know, they've gone through the thing and they're off someplace else. So I get in this line and I come up and I think, "God, I hope I don't get that same son of a bitch I had before." [Laughter] Sure enough, I got him. He says, "You got any Russian money?" I said, "No." I could hardly wait for that airplane to get off the ground. Oh, God.

So the next time I was over, I was in Leningrad, and we were at a meeting, and there was a Russian general who I got to know pretty well, and another guy, I think he was a KGB guy. Anyhow, it was a boring meeting, so they called me, they said, "Would you like to take a tour of Leningrad?" And I said, "I'd love to." And they said, "Well, come on, we'll go make a tour."

So we got in a car, and he drove us out to an old cemetery, which was a huge cemetery. It was a cemetery that was built back during the siege of Leningrad, and they had, looked like city blocks where they had buried people from a week in December, a week in November, a week in whatever, and they had soft music playing. You know, it really choked me up.

Anyhow, we went to see that and then we went, I don't know, we went several places, and when it was all over with, they said, "You stay in the car. We're going up and get some vodka." So they went up and got vodka, and we went up to their hotel room and drank vodka

for a couple of hours. I had a lot of good times with them, and they liked me and I liked them, you know. A lot of the guys I traveled with over there are dead now, and it's a different world. It's a different world. But I really enjoyed Leningrad, I really did. We saw a lot of things, went out to the summer palace—winter palace, I guess it was called. I don't know what it was called. It had been bombed out and every place you went in, they'd have pictures of what it was like after the Germans had blown up the building and then how it had been restored. It was a hell of a trip.

I remember driving back to the airport with those two guys and I said, "The last time I was over here, I went in to Moscow, and I had this Russian money and I got up to the gate and I told the guy at the gate, 'I've got some Russian money,' and he said, 'Go back over there and turn it in.'" And I said, "I'm going to give you guys this money. I don't want it. Because I'm not getting myself in that kind of a fix again." And they said, "Well, what do you want?" I said, "Look, you do whatever you want." Well, they sent me a fur hat.

But, you know, they would come over here and we would entertain them in our home or we'd go various places, and they inevitably brought me a bottle of vodka or they brought this or they brought me that. They were nice people. They really were. An awful lot of them died young, some of them died old. But we were good friends, good friends.

I lived out in—you know where Timber Cove is? Well, we had a house out there, and I would have them out to my house, and we had a basketball net up on the garage. I'd walk them down by the lake and, you know, they just enjoyed it and they enjoyed my kids, and I had a big old Great Dane, they loved him. I had a good life, I really did. I guess, in a way, I'm sorry I retired when I did, but it was time I got out of there. I lived through the better years of NASA, I really did.

BERGEN: Before you left, were you involved in Shuttle?

JOHNSTON: To some extent, not a lot. I tell you what, I left in 1977, I guess it was, '76, I don't know. There was a guy named George [S.] Trimble [Jr.], who'd been the deputy director, and he wanted me to come to work for him up in [unclear], up in Chicago. My wife didn't want to go, and I said, "Jean, I want to go, I've had enough of this." So we moved up there, we were up there about nine months, and that company was just terrible, all sorts of crooked stuff going on.

So I got a call from Sig [Sigurd A.] Sjoberg, who was the deputy director then, wanted to know if I had any suggestions of somebody who could take my job. And I said, "Yeah, I got a good one. Me." He said, "You serious?" I said, "Yeah." He said, "Well, why don't you come in next week."

I went down the next week and signed in and I went back in—I was running a meeting with the A\_\_\_\_ Division presidents, and I told George Trimble's secretary I wanted to see him. So I was just getting the meeting started and she came in, and she said, "Mr. Trimble can see you now."

So I went in and I said, "George, I've got some bad news for you. I'm going to leave the company." Well, he really exploded. He exploded. And I said, "George, you can explode, you can do anything you want, but I'm leaving. I don't like the company, I don't like the way you run it, I don't like the way you fire people. I don't like some of the things that go on in this company. I don't want to be associated with it."

And he says, "Well, when do you want to leave?"

I said, "I'll leave whenever you want me to."

He said, "Well, let me think about it."

I said, "Okay."

So I went back in, I was just getting ready to start the meeting up, and his secretary comes in. She says, "Mr. Trimble would like to see you now." So I go in and he said—and

he won't look at me—and he said, "I've thought about your leaving. I think it'd be better if you left in two weeks."

I said, "George, whatever makes you happy." So I went back in, I was just getting ready to start the meeting up, and I thought, "What the hell are you doing this for?" So I said, "Guys, I've got an announcement to make. I've just resigned from the company. I don't really feel like running this meeting. I've enjoyed working with all of you, but this is not my cup of tea." Well, they couldn't believe it, and I said, "No, I'm very serious. I'm leaving."

So I went back to my office and I thought, "Well, if that son of a bitch is going to treat me like that, I'm going to show him," so I got a couple of boxes and loaded all the stuff off of my desk, put it down in my car, and I walked into his office about a quarter to twelve and said, "George, if it's going to make you happy I'm leaving in two weeks, I'm leaving right now." I got in my car and drove home.

We loaded the car up with our big old Great Dane, and drove back down here. I'd bought a house in Green Tee. My wife had never seen it. She was irritated with me about that. [Laughter] And our daughter was up there. But we drove back and, oh, she was irritated, I bought a house without her seeing it. But we've had a good life out there.

I came back and worked, I guess, let's see, I came back in about October, I guess, and I worked through, I guess, December of 1979, 1980. Then I got a job down at the Medical Center as assistant to the president of the Health Science Center. Then I stayed there three years, and then I went to work as the vice president of the Texas Medical Center, and I stayed there for a couple years.

My boss, Phil Hoffmann [phonetic], left and they brought another guy in, who was a real egomaniac. I went down and had breakfast with him one morning. He had an office right next door to me, never even bothered coming in and introducing himself. So I went down and had breakfast with him, and all he did was tell me how wonderful he was. So after about thirty minutes of this, I said, "You know what? You and I are not going to get along.



I'm going to resign." So I just resigned. I had my own consulting business, and I didn't need it.

So I called my wife and I said, "Honey, I'll be home. Why don't we go down to Gaido's and have lunch." And I went ahead and ran my consulting business, then, through 1995, and put away a pile of money, and I don't need anything now.

BERGEN: So what did you do during those last three years that you worked for NASA?

JOHNSTON: I ran the medical programs and they put the Earth resources and the physical—well, the lunar science and physical programs together in one big science thing, so I had the medical stuff, the science stuff, and the Earth resources stuff. And I enjoyed it. It was kind of a challenge for me to run it all, but I enjoyed it. I was never afraid to take on a job out there. You know, I was willing to take on any job, learn everything you can about it and go do it.

One thing I never learned at NASA was how to run a computer, and I had people working for me always buying computers. Everybody wanted to buy a new computer. Now I've got one and I can hardly run it, but that's all right. My wife is learning to run it.

BERGEN: Looking back on your career, what do feel is your greatest accomplishment?

JOHNSTON: Well, if I've got to say, I guess getting a degree in chemistry was a pretty damn good accomplishment for me, because I started out as a Phys Ed major in college. I worked at the Naval Research Laboratory for a number of years, and did a lot of nice things down there. Then I went to work for the Bureau of Aeronautics, and I was involved with developing liquid oxygen converters for aircraft. Then they asked me to go over and take over the parachute desk, and I did that.

But then NASA was formed. I was up in Boston when the announcement was made. So I came back home and I put together a resume and an application, and sent it to a guy named George Low, up in headquarters. I waited about two weeks, and I hadn't heard anything, so I called him and I said, "Did you guys get my application?"

He said, "Oh, yeah. I sent it down to Bob Gilruth." Well, I didn't know who the hell Bob Gilruth was. He said, "Well, I don't understand why you haven't heard from them."

I said, "Well, okay."

So that afternoon, I got a call from a guy named Max [Maxime A.] Faget, and Max said, "We want to hire you." I said, "Max, I'll tell you what. I'll drive down tomorrow and let's talk." Well, I went down. Have you ever met Max Faget?

BERGEN: Yes, I have.

JOHNSTON: He is an extraordinary man. You know, of all the people I've ever worked for, Max probably has more talent and skills. He doesn't know how to manage people. But anyhow, I went down and talked to him, and he kind of mumbles and buh, buh, buh, you know.

So I drove around looking for housing, and I couldn't really find anything, and we had just bought a new house up there in Washington and I went back up, and Jean and I were sitting in front of the fireplace and I said, "Honey, you know, I went down and talked to this little guy, and I don't understand what the hell he even wants me to do."

And she said, "Well, let's drive down tomorrow."

So we drove down the next day, and I talked to his deputy, a guy named Bob [Robert O.] Piland. I guess he lives up in the Woodlands now. And I talked to a few other people, and I said, "Okay, I'll come to work."

So I moved in two weeks, and it was like going to work in a candy shop, and, you know, I would go into meetings. I remember I went into a meeting on the animal program, and the meeting was over and there was guy named Charlie [Charles J.] Donlan, who was the deputy director then, and he said, "Did anybody take any notes?" and I said, "Yes, sir." He said, "Would you mind writing some minutes?" I put a set of minutes on his desk about a day later. He said, "This is wonderful. Why don't you run the animal program till Jim [James P.] Henry gets here."

So I took over the animal program. Medical instrumentation, nobody's taking care of that. Suit program, nobody was handling that. So I went to Max one day and I said, "Max, you guys are getting sucked in by the Air Force. That Air Force suit is not a good suit." He said, "Well, what do you want to do?" I said, "I think we ought to evaluate the B.F. Goodrich suit, the Dave Clark suit, and ILC [International Latex Corporation] suit. We ought to pick the one we think is compatible with our environmental control system."

He said, "Well, why don't you go set that up."

I said, "Okay, I'll do it."

Well, I went out to Wright Field [Wright-Patterson Air Force Base], and all these Air Force guys had me in a circle when I told them what we were going to do, and, man, they jumped all over me. I finally said, "Look, you"—I won't say what I said—"but you guys don't pick on me like this. I don't need this from you guys. You do this one more time and you're going to lose your opportunity to participate in the Mercury Program. Now get off my back." Anyhow, so I said, "You're going to evaluate the B.F. Goodrich suit and the ILC suit, plus your suit."

Well, what do you think they did? They came in with a report saying they ought to pick their suit. So I went in to Max, I said, "Max, I got their report, but guess what? They're recommending their suit. It's the wrong suit."

He said, "Well, let's go in and see Gilruth."

So we went in and talked to Gilruth, and he said, "Well, go on over and talk to the astronauts."

Well, we went over there. Man, what a meeting that was. Those Air Force guys climbed my back like you would not believe. Anyhow—in fact, I got a speeding ticket going home that evening. We picked the B.F. Goodrich suit. You know what we paid for that suit? Fifty-five hundred dollars a copy.

I remember I was sitting in a meeting over there one day with the astronauts, and I was going through what we were going to do. We were going to buy a flight suit, a backup, a training suit. I remember old Al [Alan B.] Shepard [Jr.] jumped all over me, and I took it for just so long and I finally said, "Al, would you just sit there and be quiet a minute?" And I explained to him why we did this, and he backed off completely. You know, he never, ever, ever picked on me again.

But they were exciting days, they really were, and I don't know, and we had an animal program and I really helped run it. The Mercury Program was a real experience.

JOHNSTON: It really was, and it was the first time we put men in space, the first time we put animals in space, the first time we did all kinds of stuff. I've always felt fortunate I was in the heydays of those. Not a lot of people had that opportunity.

BERGEN: You saw so much from Mercury through Apollo [unclear].

JOHNSTON: Oh, yeah. Oh, yeah, yeah.

BERGEN: What do you expect to see in the future for space exploration?

JOHNSTON: I have no idea, I really don't. You know, I don't work out there anymore. I think what they're doing up there with the Soviets and the Japanese and all the others, it sounds very interesting, but I'm not real sure that there's enough space up there to do all the things they keep saying they're going to do. But I don't work there, and I can't really say that what they're doing is right or wrong.

You know, I would much rather see the United States put up their own space station and do their own thing, but they've got the Soviets and they've got the Japanese, and then I don't know who all they've got. They've got the Europeans. You know, it's a big International Space Station [ISS]. It maybe will work out, I don't know.

If I were working at NASA, I don't think I'd be real happy about it. I think that we should have enough national pride that we're going to put up what we want, and we're going to run the programs we want to run. Now, if the other people want to come up and participate, fine, but we're running it. But that isn't the way the International Space Station is being run. There's a big community of countries that are running it, and we just happen to be one of them. And, unfortunately, we're putting most of the money into it.

BERGEN: Yes, we are.

JOHNSTON: We are.

BERGEN: Well, before we conclude your oral history, is there anything else you'd like to mention?

JOHNSTON: Anything else. The only thing we really haven't talked about is Apollo-Soyuz, and that was a very interesting program. Let's see, who flew in that? Deke Slayton and Tom [Thomas P.] Stafford, and who the hell was the other guy? Anyhow, it was a good mission,

but when they came in, one of them popped one of the valves that brought in the gases from their reaction control system, and they were all exposed to some pretty serious gas. I got word about it and went back out to the center, and [Christopher C.] Kraft [Jr.] came out and we called around and got quarters for them to stay out in Hawaii. Ends up, they were all right, but it was kind of a funny ending to a mission.

The mission itself was more political than it was scientific. Stafford and Slayton, and I can't think of the other guy's name who flew in that now—that's what happens as you get older. But anyhow, it was a good flight. I guess there were only two Soviets. They had a good relationship. I was glad to see Deke finally get to fly.

I remember—I will have to tell you a funny story. Deke had been taken off flight status as a Mercury astronaut. He had some kind of a heart problem, I don't know what the hell it was. But anyhow, we got him back on flight status, to fly in Apollo-Soyuz. I had a guy named Royce Hawkins, who was an M.D. who worked for me, and we were getting ready to go down for the flight readiness review, and I went with Royce to talk to Chris and I said, "I don't really think I'm necessary. I'd like to play in a golf tournament over the weekend."

He said, "That's okay. Why don't you play in that."

Well, I get up in this golf tournament, which I'd won, and the phone rings and it's Chris Kraft, and he is like, I couldn't tell you how—oh, he was livid. Evidently, Hawkins had gotten with a guy named Dave Winter, who was head of the medical stuff up in headquarters, and they'd made a lot of phone calls around to all sorts of doctors in Houston, blah, blah, blah. Anyhow, they go into this flight readiness review and Hawkins pops all this crap on him, and he insults George [M.] Low, who was then the acting administrator of the agency, and he insulted Chris Kraft. Well, Chris just climbed my frame.

I said, "Chris, I had nothing to do with that. What do you want me to do?"

So he gave me about six things he wanted done. He said, "First of all, I want you to get Hawkins out of the Cape, I want you to tell him never to come in the control center," and he went through a whole series of things.

So I said, "Okay, just relax."

So I called Larry Dietlein [phonetic], who was my deputy, and I said, "Larry, would you meet me out at the center about six in the morning and let's go over the ground rules." I called down to the Cape and I said, "Get all those doctors together in one room down there. I'm going to tell them what the hell we're going to do."

So we went through the ground rules, and I said, "Now look, I want to tell you guys something. I've gone through these ground rules. If any of you can't live with them, get the hell out of there, because that's the way we're going to fly the mission." And I said, "Dave Winter, that goes for you, too. I don't care if you are the head of the damn life sciences for the agency. I'm telling you the way we're going to fly it." Never said a word.

There was another guy named Rufe Hesberg [phonetic]. Unfortunately, he died about two years ago. But they had influenced Hawkins to the point where he just wilted. Well, he never, ever amounted to anything after that. Chris said, "If he steps inside of that control center, I'm going to kill him."

But we flew the mission all right. We flew it all right. It was not necessary what they did, you know. It was just not necessary, because Deke had been cleared for flight. They didn't need to be calling around to all these cardiovascular people downtown and all around the United States. It was crazy. If they wanted to do that, they should have done it a couple months before, not the day of the flight readiness review.

So anyhow, that was the end of it. I remember, though, sitting with Chris Kraft out in my conference room, or up in my office, about two or three o'clock in the morning. We were calling around everywhere in the United States trying to get the place to put them, and then I

had to call their wives and arrange for transportation for their wives to go out and spend time with them. It was a mess.

But I think—you know, and I'll tell you what. Deke Slayton gave me, which I have at home on my bookcase, his EKG [electrocardiogram] mounted in a little plastic thing, with a real nice plaque that thanks me for all the things I did for him. Deke was a real fine guy. He was a class guy, he really was.

After I took over from Berry, I remember, I went up to see Deke one day and I said, "Deke, why don't you and I talk about things before we put things in writing? I know you and Berry have always had conflicts. It isn't necessary. It isn't necessary. And if there's something you and I can't agree on, then let's figure if we can't work it out."

He said, "Okay."

I never had a problem with him. Never. And if there was something he didn't want to do and I wanted to do, we worked it out, and it was over with. I was always a good peacemaker. Chuck wasn't. Berry was always off on travel, he never paid any attention to what he was doing. He would wait till the last minute and, consequently, he was never there. He was never there. And after he left, I took it over and I straightened that stuff out.

I got along very well with Deke and the crew. Al Shepard, all his guys, they all respected me. In fact, Al Shepard, he was a great guy. When I left Crew Systems, he presented me—I've got it hanging on my bedroom wall—great big thing with all the insignias of all the flights that I'd supported. Al had signed it. In fact, all the crew had signed it. I felt real bad when he died. He was an extraordinary person, he really was.

In fact, John [H.] Glenn [Jr.], Al Shepard, Deke Slayton were the best of the original seven astronauts, and from there it went downhill. They had some real losers on that group. Wally [Walter M.] Schirra [Jr.] was one of the worst, but the real worst was [M.] Scott Carpenter. He was really something else. You know, he was coming back in from his Mercury flight and he started seeing these things go by his window and he wasn't paying any



attention to what he was doing. He overshot the landing area by 200 miles. Oh, they were furious with him.

But, you know, at Al Shepard's memorial service, they had the four guys who were left, John Glenn and I don't know who—John Glenn and I can't think of the other couple guys. John Glenn. Scott Carpenter was there and [L.] Gordon Cooper [Jr.] was there, and Wally Schirra was there. But Al Shepard was an extraordinary guy, he really was, and he was never a problem, never a problem. But unfortunately, he got some disease and it killed him in two years. So they cremated him and put his ashes in the Pacific Ocean. And his wife died about a month later. Well, I didn't mean to get into that.

BERGEN: That's okay. That's all I have if you don't have anything else.

JOHNSTON: Anything else you ever want to talk to me about, call me.

BERGEN: Okay, we'll do that. Thank you very much for telling us about your history. But before we close, we'll see if Kevin has a question.

RUSNAK: Yes, actually, I had a few questions, if you don't mind.

JOHNSTON: No.

RUSNAK: First, on some general things, I guess, just reflections on your career. You began to talk about the new International Space Station, and I wondered what you feel NASA should have or did learn from Skylab that would be appropriate for the ISS?

JOHNSTON: Well, that's kind of a hard question. We learned an awful lot about the medical aspects of it. Now, whether a lot of that stuff still applies, I don't know. It's hard for me to say. I think we learned a lot about Earth resources and a lot about other things during that period. So I can't really tell you exactly what I think the Space Station, as they're getting ready to launch, will really accomplish.

RUSNAK: Well, I guess I was thinking in terms of how you operate a station and sort of the daily running of long-term missions, because Skylab was really our first exposure to that.

JOHNSTON: Well, I think they learned a lot about long-term flight with the Skylab program. Now, how they handle that, once they put people up there, I'm not real sure how they're going to do it, because you're going to have a whole variety of people up there, from the Russians to the Japanese, to the Germans to the French to the English. You know, it's going to be a conglomerate. It's going to be like the United Nations.

So I don't know exactly how they're going to control it. I don't know who's in charge. I don't know if the United States is going to be in charge, or if they're going to have some kind of a council. I don't know how they're going to do it. I'm not in the middle of it, so I can't really tell you. I think they're making a mistake by not having one country really in charge of it, and I really think it ought to be the United States, but I'm not running the thing, so I can't really say that.

I don't know, I really don't know what the objectives of the International Space Station Program really are. I know they're going to try to study space medical things, and they're going to try to study Earth resources, and they're going to try to look out toward the Moon, and they're going to try to look at ways of going out beyond our immediate universe. Whether they're successful at that, I don't know. I think only time will tell, and, unfortunately, I'm not sure I'm going to be around when they find out. I wish them well. I

hope that we succeed with it, because I think it'd be a good thing for the whole world, not just the United States.

RUSNAK: Back to Skylab. After Apollo 11, I think public interest in the space program declined.

JOHNSTON: It waned.

RUSNAK: Yes. How did that affect Skylab, and what do you think the public's perception of Skylab was?

JOHNSTON: Well, I think after we launched the lab itself and that side blew off, I think it re-invigorated people's interest in space. I think the fact that we were able to save the mission and then we were able to send some guys up, put out that big old umbrella we did, fly people for twenty-six days and then fly another crew for, I don't know what it was, fifty-six days or fifty-four days, and then another crew for eighty-something, it re-invigorated people's interest in manned space flight.

But then we had the Shuttle accident, which did not help the space program, did not help it. Unfortunately, that was caused by our friends down at Marshall [Space Flight Center]. In fact, I was out at Martin Marietta, I was working for them then, and there was a group of young engineers from Marshall, and they were really picking on us about the fire, and it really got me mad. And I finally said, "Look, you know, we had the fire, but do you realize what you guys did? You killed seven people." So I said, "Don't tell me about what we've done."

Well, that got a couple of people from Martin really mad at me. I was working for them then. They wanted to fire me. And I said, "Look, if you want to fire me, fire me. I just

tell people like I think it is." Well, they didn't fire me. But there was no reason for that. They were a couple of young guys who were just showing off in front of some young women, that's what it was all about. And after I did that, I just walked out.

But, you know, I had a lot of good friends at Marshall, but there are people at Marshall who have a very strange attitude toward the Johnson Space Center, and there are people at the Johnson Space Center who have a very strange attitude about the Marshall Space Flight Center.

There's a lot of fighting between the two centers. I've never felt that way. You know, I think we're on the same team. They built the boosters, we built the spacecraft. They mated, they flew. We did things jointly, and I just never felt any kind of animosity toward the people at Marshall, I really didn't. But there are people at Marshall who feel a lot of animosity toward the Johnson Space Center. We got a lot of credit for things. You know, I don't think anybody asked for it, but that's the way it was. That's the way it is.

RUSNAK: As I'm sure you're aware, this is the twenty-fifth anniversary of Skylab, and recently some of the astronauts did a press conference here on site, and made some comments that I wanted to ask you about. One of the things we're dealing with, I think with the Skylab 4, where the crew had their so-called "rebellion," where they had some disagreements and the astronauts really played that down and said that more was made of that than perhaps should have been. What were your thoughts on that incident?

JOHNSTON: Oh, I think, you know, I think I mentioned that earlier. I think that, unfortunately, the one guy got sick and threw up and they didn't know they had their mikes open, and that got Kraft irritated, and they got dressed down on national TV, and I think it really upset them and I think it upset a lot of people in the astronaut corps. But I think if

you—you know, I think Chris was right. I mean, I don't agree with anything Chris Kraft does all the time. He's got a hell of an ego, but I think the way he handled them was right.

In fact, I remember, he called me to come out and sit down with Deke and we talked about it and, you know, he told him, he said he wanted either Deke or Al Shepard to get on the line and tell those guys that we didn't want any more things like that happening. I think it kind of upset the crew they did that to them, but I don't know, I don't know. You know, I knew all those guys who flew in Skylab real well, and they never one of them ever said a word to me about it.

RUSNAK: This was probably outside of your jurisdiction at that time, but they also mentioned that after having been up there for a long period of time, the astronauts essentially grow, because their spines aren't being compressed, and if they put on their spacesuits after that, they tended not to fit because they were fitted on the ground, and then that caused them some discomfort, and I guess there were some issues surrounding that. Were you aware of any of that?

JOHNSTON: You know, I can honestly say that at the time, I was not aware that that was a problem. And I think that there's probably some truth in that. You know, when you're up there and you don't have 1-G pulling your spine down and whatever, the suits are not going to fit you the same way.

RUSNAK: Okay. That's all I have. Thank you.

BERGEN: Frank, do you have any questions? Well, that's all I have. We want to thank you for coming and sharing with us.

JOHNSTON: I'm happy to do it. Happy to do it.

[End of Interview]