

ORAL HISTORY 2 TRANSCRIPT

DON FUQUA
INTERVIEWED BY CATHERINE HARWOOD
HOUSTON, TEXAS – 11 AUGUST 1999

HARWOOD: Okay. I will start with those basic questions. I'll start by saying that it's August 11th, 1999. (I hope it's August 11th.) And we're at the Johnson Space Center in Florida, and I'm Catherine Harwood interviewing Don Fuqua. And I'm going to start with those background questions.

FUQUA: We're actually in Texas, though.

HARWOOD: Did I say Johnson Space Center in Florida? I meant, Johnson Space Center in [Houston] Texas. Thank you! Moved the Johnson Space Center. See, I was going to ask you about the politics—

FUQUA: Yes.

HARWOOD: —when they wanted to move the Johnson Space Center. But we'll get to that. Some background on your childhood in terms of where you grew up in Florida and the path that kind of led you to start your political career in the Florida House of Representatives, the State House.

FUQUA: Well, I was born in Jacksonville; and my father was working with the A&P Tea Company at that time as a store manager. He had come from Alabama, but things were tough back in the '20s because of the Depression—late '20s. And he left the farm and came to Jacksonville and got a job with them, and became a manager of one of their stores. And

when I was about 5 years old, he decided—I also had a younger brother come along about that time. And he decided that Jacksonville was too big a town to raise two boys in, so he'd go back to the farm and things were getting a little better then. And so, we moved...over in West Florida...[to] a little town called Altha (A-l-t-h-a). It's about an hour west of Tallahassee; it's just off Interstate 10 now, just south of it.

A farming area and where my mother had [been] born and raised there. And then, of course, I...did the usual things in high school. Played football and other sports, and played in band. It was a very small high school. My senior year in high school, I was elected State President of the Future Farmers of America...and it got me to travel around the State; and I became interested in politics during that course. I enrolled in 1951 at the University of Florida [Gainesville, Florida] and had a good time there for a couple of years, and then the Korean War came along. And I decided that probably I was going to get drafted or get kicked out of school, so I volunteered for the Army and served 2 years in the Army and wound up in the Medical Corps in the Army as an enlisted man. Came back.

[I] finished up school...and got married. Went back to the farm and I started taking over our business in dairying and farming... And then a year after I was back, in '58, I ran for the State legislature and was elected. I was the youngest person there. I was 23 years old and—when I was elected. And then 4 years after that, there—because of the '60 Census in 1962...four new [Congressional] districts were created in Florida. And one of them was in our area; and I debated about whether or not I should run; and I decided that if I didn't run, that some character would probably get elected and stay in there for 25 or 30 years and I'd never have a chance to. So, we were in the process of selling the dairy business...which...made less demands on [our] family [business] at the time... So, I ran and was elected and was the youngest member of Congress in the 88th Congress... We were sworn in, in '63, I was then 29 years old.

Agriculture was very important in our district, but we had a member on the

Agricultural Committee. And during the campaign, while I was in the legislature, I had a couple of visits down to the Cape. They had invited State legislators down; and I became very fascinated with what was going on there in the early days of Atlas Program and the Vanguard and the Redstone. And then when John [H.] Glenn [Jr.] was going to make his first flight, a friend of mine in the State legislature said, "Let's go down and see that flight." So, we went down. And, of course, it didn't go; and then it got rescheduled. And I'm in the process of running for Congress during this time, and we went back down to see it, and it didn't go off.

On February the 20th, 1962, (John Glenn and I have talked about this before), I'm having a big kick-off for my campaign. That's the first day that you file your papers officially to put your name on the ballot. We were having a big fund-raising kickoff at a restaurant in Tallahassee at that time; and lo and behold, that's the day that Glenn's flight went off. He disrupted my whole entry into politics—or to Congressional politics at that time, because everybody was at the radio or television trying to see what was happening. Was he still alive? And so forth.

So, I get to Washington. And there were some vacancies on the then-called Science and Astronautics Committee. And I was fascinated by—even though my background had been in agricultural economics, I was fascinated by this program. And it was something that I thought had a lot of potential; and so, I asked to get on the committee...and then was placed on then-called the Manned Spaceflight Subcommittee. And there, I became more and more interested. Of course, the committee's jurisdiction was much broader than just space.

It had a lot of science and so forth, and I had universities in my district; and it made a very good fit. Even though I had no space dollars or no space facility in my district, it was a wonderful learning experience to be there; and, by osmosis (I guess), I learned a lot about science, science policy, space policy, and, of course, the space program. And then the Apollo Program...had just been announced. We were still in the end of the Mercury

Program, getting ready to move into the Gemini Program. And so, it was a very fascinating experience.

HARWOOD: Let me fill in a couple of dates from some things you mentioned in that. When you were in the Army Medical Corps, did—were you stationed anywhere? Were you sent somewhere?

FUQUA: Oh, oh, yes. I bounced around to a lot of different places. ... After I finished basic training at Fort Jackson [South Carolina], they had openings in the—in the 8th Infantry Division Band, so they asked—I did an audition, got in the band, and had a great time there. And then, of course, the Korean War was getting over. I think when they heard I was coming...they decided to have the Armistice. But, the Korean War was over; so, the Army was downsizing.

I was probably not a person who was going to make a career out of music; and so, I...got [transferred] into [the Medical Corps]... They thought that I might make a good medical technician or a bedpan jockey. And so, I went to training at Fort Sam Houston in San Antonio, and then to Fort Benning [Georgia], and then wound up in Fitzsimmons Army Hospital in Denver to spend the rest of my [tour].

HARWOOD: What rank did you achieve? What rank did you—?

FUQUA: Oh, I wound up a corporal. I later, while I was in college, got in the Army Reserves and got a commission. And then retired as a Army captain. But—

HARWOOD: What year were you married?

FUQUA: ...The first time, I was married in '55 and we had two children. That's the only two children that I have. That marriage ended in about '73; and then in '76 I married my present wife. She had three children. All of them at different points lived with us. And we have five wonderful children together; and—

HARWOOD: And—

FUQUA: —We are very, very happily married.

She was a political wife, one that enjoyed going out and doing things. And being gone a lot in my early political career probably led to the separation between [my first wife and myself] or the drifting apart. But she was a wonderful lady. But we had different...paths. She was a homemaker. But that was an unfortunate thing that takes its toll among many, many people.

HARWOOD: The—you mentioned that—you're degreed in Agricultural Economics. Anything from that background that you could see as you reflect on the years that you spent focusing so heavily on funding in the space program? Anything translate over?

FUQUA: Well, a lot of it. Like in remote sensing that—and in communications. You look at farming today. It's totally different than when I was growing up on a farm. One, it's—you have air-conditioned tractors and so forth. But you use a lot of space technology in that and in many other facets. Farming has become very scientifically oriented, and taking advantage of a lot of things. So, there—yes, there was a lot of spill-over of things, and how plants grow and disease resistance. A lot of the things that...the space program has helped move along.

HARWOOD: Now, the House committee. You mentioned how you got on those committees,

that at the time there were vacancies and you just basically expressed an interest. When you got on the committee in terms of the timing of things in conjunction with NASA programs that were going on, what do you recall that—things that you did on the committee that related to Project Gemini? Let's start with Gemini.

FUQUA: Well, the Gemini Program was already under way... The program had started several years earlier [and] it was very important to the Apollo Program. One, we had to learn how to rendezvous and dock. The other was extravehicular activity [EVA]; how would we—how would that happen and be accomplished?

I have to tell you a funny story. One of the early meetings, and they both are deceased now unfortunately, but we had an extra capsule—a Mercury capsule. And the chairman of the subcommittee at that time was Congressman Olin [E.] Teague, who was from Texas. A wonderful guy and a great friend of mine, and I learned a lot from Tiger Teague, as he was called. (And he didn't get that name lightly!) As a matter of fact, the auditorium here is named after him as it should have been. He was later chairman of the committee, and I succeeded him. I...followed him, I was a chair of the subcommittee when he moved on to be committee chairman.

Anyhow, he called us over to a meeting...with [Virgil I.] Gus Grissom and Alan [B.] Shepard [Jr.]. And they wanted to fly that last Mercury capsule and do an EVA. And...it sounded like a good idea. Why waste the capsule? [We] already had it... So, we took it up with the NASA people; and, of course, they were incensed that they had even suggested that! That we had to move on to—first of all, they weren't sure about the getting in and out of capsule with—and whether the spacesuit they had would even stop a meteorite or some type of—of penetration that might come along. And the second, they said, "We've got to save the money and put it into the Gemini Program where we'll do some of these things. We can't do that." That was one of my first encounters with Al Shepard and Gus Grissom. But they were

willing to take the risk.

HARWOOD: They thought they could your all's support—

FUQUA: Yes.

HARWOOD: —and that would influence NASA?

FUQUA: Right. And after we listened to NASA's side, we decided that it was probably not the best idea either. But they were gung-ho and willing to go.

HARWOOD: You mentioned that you were sworn in, in January of '63. Obviously in '63, you know, Kennedy has—had made his speech about going to the Moon in '61 (I believe). May of '61. So, that mandate was out there. And then in '63, obviously, the assassination happens. Do you remember, you know, what your thoughts were at the time? And what you thought it would do to the space program and to that mandate? And what you anticipated? And then the reality of what happened? If you would reflect on that.

FUQUA: Well, of course, I had been invited with Kennedy to come down to Texas. They were going by San Antonio, and he was going to dedicate the Aerospace Medicine—Medical Center there in San Antonio. And I had something [going on and] I could not make the trip, so I could very well have been with him that day in Dallas, but I was in Washington. I had gone to lunch. And I came back and somebody in my office said, “There's a rumor on the radio” (somebody had a radio in their office) “that the President had been shot.” And so, off the House floor there were two ticker machines, an AP [Associated Press] and a UPI [United Press International] machine, the old kind of noise-making machines, the ones with yellow

paper and so forth. And I said, “Well, gee, I’ll run over there and I’ll get the latest information.”

So I’m over there, and then I notice that right off the House floor (this is just off the House floor; the House was not in session that day), but down at the end of the hall was the Speaker’s office. And I noticed a gathering of people coming—coming down there. And a Catholic priest came up—I don’t know where he came from or who he was—and we were reading and they were giving the running detail of what was happening over the wire service [about] Kennedy. ...I would tear this off and take it down to the Speaker’s office; and I didn’t go in, because they had the Republican leader was there and the Whip and all the hierarchy of the House leadership. I would just hand it through the door and go back and get some more, so I was a kind of a runner.

And it was a very devastating thing. Kennedy...inspired of me in one thing, in going to Washington. I had met him in 1960, when he was down at the University of Florida for...[the] have annual Blue Key Banquet dinner, and he was [the] speaker. That’s when he was getting ready to run; and then-Senator George [A.] Smathers had brought him there to speak. And I was at several events with him, spoke to him, and became very inspired; and then the next year, I was active in his campaign.

It was a very devastating thing. But I felt like that he had made the commitment and that we would go through with it. And President [Lyndon B.] Johnson had—then President Johnson had reaffirmed that, “We will go through with this program.”

HARWOOD: Did you—when you all were overseeing, you know, the funding of Apollo—and many people say that that program really taught NASA how to play the politics of space, that, you know, you learned that—and there’s always been, to this day, that debate between the big programs and do they kill off the little science programs? But that Apollo became, you know—it’s proof of the political will of the country and also what you can do when

you're willing to spend a lot of money. I mean, what do you remember about the political bite—fights over Apollo? And was it the sense that they had a blank check from you guys? Or what do you remember about—?

FUQUA: No, I don't think it was a blank check. But Jim [James E.] Webb was the Administrator of NASA at that time, been appointed by Kennedy. He had been budget director under [President Harry S.] Truman. He knew his way around Washington and was probably one of the most political savvy government officials that I've ever run into before or since. And Jim Webb was a master. Of course he'd been director of the budget, is now Office of Management and Budget (been the Bureau of the Budget back then)... He knew the ins and outs of government. He knew a lot of people. [There were] a lot of...political leaders that were very much supportive of this program. Of course you had Vice President then and President Johnson. Bob [Robert S.] Kerr from Oklahoma. You had Clint Anderson from New Mexico. And in the House, people like Olin Teague and others that were very strong supporters of the program. And it was a bipartisan support.

But, no, the budget—what they recommended, Webb had always put the budget numbers up there so you could get a cut, you'd look good, and still they'd have enough money to proceed with whatever they needed to do. He was a master.

HARWOOD: Is there a fight or an issue from Apollo—Project Apollo—that stands out in your mind as something that you individually, like, fought for or against or, you know, anything from Apollo stand out in your mind?

FUQUA: Well, there were a lot of issues with Apollo. I think that, one of the first, and then I was kind of on the sidelines...but—at the beginning, they didn't know how they were going to the Moon! Whether to have a direct ascent to the—to the Moon or—or do this

complicated rendezvous and—and then go into lunar orbit and then land and come back. And all this was very, very complex.

And then there were some programs, not knowing whether or not you could do rendezvous and dock. And some of the early episodes in the Gemini Program were somewhat less than successful. In the Agena Program, I know Neil [A.] Armstrong (and I don't remember all the others that were involved in that) that had a very, almost tragic experience with docking. Well, you had to do this to do the way they finally decided to do it. The [Wernher] von Braun's of the world were saying, "Let's build the biggest rocket ever and we'll go straight there and you don't have to go through all of this." Then there were others that were saying, "No, we need to go through this more complex situation," which sounded too complex to a simple mind like myself.

But, then there was another program called the Ranger Program, which was going in and crash land on the Moon. Was this Swiss cheese? Was it quicksand? What—what are we putting these people into? And trying to determine what the surface of the Moon was like. But there was a big construction facilities going on then, building of the Johnson Space Center.

I remember when...coming here and this was nothing but a pasture. The Kennedy Space Center. [They] had to build [the] Vertical Assembly Building and all the launch pads, and all the things associated with that. The—get the [river] canals [dug deep enough]. To...[get the spacecraft] from [Marshall Space Flight Center] Huntsville [Alabama]...down to Michoud [Assembly Facility, New Orleans, Louisiana], there was a tremendous amount of construction work going on at that time. And we were trying to keep our hands and arms around that it didn't get out of hand.

And then one of the things that I recall that appeared to me was going to be the limiting factor and the—and the lowest of technology was the crawler that was going out to the [launch pad at the] Cape. They had all types of problems with the—one, with the

magnitude of this crawler and the great big cleats that it had. It weighed like 200 lbs a piece or something like that. And they couldn't find a surface that it could crawl on. They thought it could crawl on the earth; it was chewing up the earth. They put concrete down; it chewed up the concrete. Now they finally came up with this idea of putting river gravel in a trench and it could crawl on that. But it looked like we'd have all this thing built and couldn't get it to the launch pad.

In the meantime, we were having a lot of problems with some of the launches. The reliability of launches. There were a series of concerns going on, none of which I was the major problem-solver. I think we were all—all of us were amateurs. We were having to rely on the best advice that we could get and then try to use the best judgment you had as to what was going on! ...Of course, NASA had a great deal of credibility; and you would have to trust the expert that this could be solved. But there were a lot of problems.

I remember one was in the pogo-ing of the Titan... The Titan that was launching the Gemini, and they had a lot of pogo-ing going on, where one end was trying to move faster than the other part. There was a tremendous amount of anxiety, I think all along, about this program. Yet we...still—had support for it.

There were those who were opposed to it. Kind of the Flat Earth Society, that were opposed to any type of [manned] space exploration. And, why were you—why were we exploring it? Because it was there! And just like we'd climb mountains and we'd swim oceans and get in a bathtub and try to go across the Atlantic or something. So, it was—and I was a more of a junior member of the committee, so I'm trying to (as President Bush says) “be prudent,” and try to understand and make contributions where I thought that I could. But I thought it was still a very worthwhile program.

HARWOOD: The Apollo 1 fire. Do you remember that in an active way? I mean, did you play any role in the investigation that you recall?

FUQUA: When the fire happened, NASA impaneled a review board, and then the Manned Spaceflight Subcommittee, which I was a member, and we invited some other members, but I was a member of it, we reviewed their findings. And I shall never forget—of course, I knew all three of the astronauts and remember that cold, January day at Arlington Cemetery where we buried two. And it made a very, very deep impression on me that, you know, maybe we'd better rethink this thing. I never lost confidence that we should not go; I felt like we should go. But sitting on the [Congressional] review panel, and [reviewing what] NASA had done. All we were doing was trying to satisfy ourselves that they had looked under every stone, had gone to every length to try to understand what [caused the fire].

The press was very, very determined that there be some head on a platter and that there were people trying to cover up. We were trying to make sure that there was not a cover-up. And I was satisfied that there was not. That the truth had been realized [in] what had happened. It was unfortunate. And methods were changed. But it almost brought the program to a screeching halt. It almost stopped the program in its tracks.

And we kept thinking, “What if we have another accident like this?” You know, “What will it—what will it do?” And it's—it would be—at that time, we felt like it would be very, very tragic. I mean, not for the—in addition to the people involved, but also for the whole program.

HARWOOD: What you had brought up an issue in your last answer about the massive construction that was going on around the country. And some would say that one part of the politics of NASA is spreading out the wealth and, you know—you could supposedly can get a chart that shows the NASA dollars spent in every Congressional district and what you need to lobby on space issues. But take us back and recall in your mind what politics do you recall? What political discussions do you recall about deciding where Centers would be

built? You know, some would argue that the Johnson Space Center should have never been built. It would have just been cheaper and wiser and, you know—with *Challenger*, even, the issue was brought up of, “What if the communications hadn’t been so spread out? That they’d just been right there training at the Kennedy Space Center.” So, recall what you can from the time about the decisions and the politics that went into spreading it out.

FUQUA: Well, at the time, I was on the committee about the time they decided to move the training from...Langley and Kennedy to the Johnson Center and, of course, I was concerned about that. Later in life and understanding (and probably a few more gray hairs on my head), I realize the wisdom of the politics of it. You can’t have it all concentrated in one area. And it needs to be spread out to broaden the political base.

And of course, at that time, the Apollo Program was really a creature of the Cold War. We were not going to stand and let the Soviets be the first to plant the Red flag on the Moon! And we were in this race with them, and that was one of the underlying support mechanisms for this program, even though it was not discussed as openly. But it was one of the major things. So, I think spreading it around [was good]. We had a lot of the contractor base in between St. Louis and the West Coast, and particularly California, the Los Angeles area.

I thought the Kennedy Center, then Cape Canaveral Air Force Station, was pretty secure because of all the infrastructure that they had built there, and there wasn’t a lot of other places where you—near the equator and on the east side of the country with an ocean between you where debris could land and so forth. So, the Kennedy Center, I thought, was pretty secure as a launch facility. There could be debates, but I think it was a wise decision to spread it around. And I also—it didn’t take me very long to realize that, and I tried to explain that to some of my Florida colleagues that, you know, “You could lose the whole ball of wax, and let’s don’t rock the boat too much.”

HARWOOD: Did you—

FUQUA: “We can complain about it, but don’t, you know—let’s don’t have anybody take us too seriously.”

HARWOOD: —did you go to many of the Apollo launches, especially Apollo 11?

FUQUA: Every one of them.

HARWOOD: Okay.

FUQUA: Every one of them.

HARWOOD: And—

FUQUA: The only one I missed was Apollo 12—

HARWOOD: Your—

FUQUA: —and I was about 60 miles away when that happened, because I was in the middle of a campaign and I was having to campaign at that time. But I went to every one other than that.

HARWOOD: And your thoughts, as someone who has had, you know, worked kind of behind the scenes and in front of the scenes to fund this program? Your thoughts when we left for

the Moon and when you actually saw those fuzzy images that we all watched of Neil and Buzz walking on the Moon? What did you think? And was it all—?

FUQUA: I had tears in my eyes. Tears in my eyes that it had happened. Went to every launch. One of the things we were fortunate: we got to know the astronauts and talk to them and—before their launch and after their launch. And they were human beings, and they had a humorous side. They were—in addition to being wonderful human beings, they were very competitive. One of the things that Mr. Teague emphasized that...and tried to have was a back-door communications with the astronauts.

Are you happy with safety procedures? Are you happy with the training? Do you think you're getting adequate training? Do you think that they're short-sighting you on safety? And most of them were, you know, they never had any complaints. There was only one. One time we were meeting with them and these were very quiet meetings, no NASA people were there. Just the—.

HARWOOD: These weren't like subcommittee hearings?

FUQUA: Oh, no, no, no.

HARWOOD: These were private—

FUQUA: No, this was backroom meetings. Mr. Teague would call and say, "I've got so-and-so and so-and-so coming by the office. Come down here a minute." And so, we'd come by. We'd—off the record. One of the things that came up one time (and I don't remember who it was) said, "You know, we're—we've got these training airplanes but there's not enough of them. And every time we go somewhere for a public appearance or we go to California,

we've got to catch an airplane and fly at government rates in the coach class. And we've got to fly to California. We've got to get back, and so forth. Why can't we do two things? Why can't we get our flight hours in, keep our flight hours up, and we can use the airplanes to go do these things?"

And Mr. Teague said, "It sounds like a good idea to me." So, we put money in the budget to buy more T-38s. And in effect talked to NASA and said, "Hey, let these guys fly these airplanes." And so, that happened. That was one of the good things that came from that.

HARWOOD: How long did those informal meetings with the astronauts carry on through the program? I mean, are they still going on today that you think?

FUQUA: I don't know about today. But when I was chair and I remember the Shuttle was one of the programs that started under me and completed under me. And I remember we were down here, we were getting ready for the first Shuttle mission. And we had a meeting with John [W.] Young and Bob [Robert L.] Crippen; I think Dick [Richard H.] Truly and Joe [H.] Engle were the backup crew. We were down here for a hearing. We asked to talk to them, and we went into some closet somewhere here and—or we told NASA we wanted to talk to them. And we kept it up.

And I used to go down before a launch and have either breakfast or dinner with the crew, and we would talk privately if they had concerns. Sometimes they did have concerns. And just before *Challenger*, one of them expressed some concern to me about what was going on at the Cape, and I had become very alarmed about that at that time to my own self, that there was a lot of laxity going on in the preparation of the Shuttles for the launch.

HARWOOD: Well, we will explore that in much greater detail, because I am going to focus

the majority on the Shuttle—

FUQUA: Sure.

HARWOOD: —since that is really your program. But let's finish up with Apollo. You know, the Apollo Program is winding down. Were you surprised at how quickly the American public lost interest?

FUQUA: Oh, I didn't—I didn't realize the magnitude of that devastation. I remember going to a Goddard dinner about '73 or '[7]4; they had it in [the] Washington Hilton Hotel. It's a great, big—big room, seat 2,000/2,500 people. And they only had about half—about a third of the room, in the middle part. The other part was closed off. And I thought to myself—and that was kind of a judge of how contractors and people were viewing the programs, and I said, "Gee, I can't believe how small a crowd we have here this year! This is tragic!" And that time I was—in '72 I became chair of the Manned Spaceflight Subcommittee. And that a lean period.

We had Skylab getting ready to fly. And we had the ASTP [Apollo-Soyuz Test Project]—the joint Soviet mission—and that was it! The Shuttle was starting to come along, but it was going to be a long time before anything. And people after Apollo 17 and the last flight, people said, "Oh gee, you know, it was so routine. We've been there, done that." And nothing seemed to really excite people. Plus we didn't have a lot of scientific missions. It was just kind of a hiatus in space.

We had a lot of things on the drawing board. I remember in 19—I think in 1974 or something first hearing about the Hubble telescope. It was 1990, I think, when it was launched! But it was a very troubling time here. We'd had the resignation of President [Richard M.] Nixon. We had the energy crisis. Gas lines. It was the aftermath of Vietnam.

There was just a lot of dissention, and people didn't care! And it really bothered me. And I looked at my job then as chair of the subcommittee, as "You know, I got to sell this program if I believe in it. And I got to sell it to my colleagues."

So, a thing that Mr. Teague did, and—not original with me, is try to get my colleagues to come out and see. Take them to the Cape. Show them what's going on there. Bring them here and show them. Take them to a contractor. Show them what some of the things that they're doing, so they have a better understanding about what we're talking about. It is real things. And I've been to so many contractors, you know, I could almost give the tour!

But—and they wouldn't go unless I would go. So, I kept going back and back and back and back. But we did, every Spring—or not every Spring. Right after the first of the year. About the time the budget came out, we'd start a tour. And maybe for 2 or 3 weekends, we would go out and tour various facilities. Try to get an understanding of what was going on, what their problems were, and what they planned to do with the money. And I don't know if they still do that or not. I don't think they do. But we did back then.

HARWOOD: Probably not to that extent. You mentioned the Apollo-Soyuz Test Project. Was it hard for you to believe that that—you know, you mentioned the Cold War fueling the race to get to the Moon, fueling Apollo. And then to think that Apollo's last hurrah would be this joining up with the former enemy in space.

FUQUA: Yeah.

HARWOOD: Your reflections on that?

FUQUA: I remember talking to Mr. Teague about that. We were down [in the House gym]

and Mr. Teague was a great paddleball player, and I like to play paddleball. And even though he had a disability with his foot from World War 2, he was a mean paddleball player and wore a big old built-up shoe and would step on your foot and have your toenails black...! But anyhow, we'd been down in the gym and we were just getting through taking a shower, and he was asking about, "You heard about what Nixon has announced—that he's going to announce—about this joint venture with the Soviets?" And I said, "You got to be kidding!" He said, "No." I said, "Did he talk to you about it?" He said, "Hell no, he didn't talk to me about it!" I said, "I can't believe this."

And my first thought was, "What if we get up to the night before launch and somebody maybe throws an egg on the front steps of the Russian Embassy here or on our embassy in Moscow and the whole thing...is called off?" It was so—our relations were so precarious at that time, "How are we going to be sure this thing's ever going to happen? What about the language and all this stuff?"

And I was still concerned about that up until the time, even after talking with Tom [Thomas P.] Stafford and some meetings with [Alexei A.] Leonov the Russian, I felt a little better about it. But it happened. And I had a lot of concern that, you know, some little incident could blow up or the Russians invade somebody or we would do something that would irritate the Soviets and the whole thing would be called off. But to the credit of the leaders of both countries at that time and to NASA and the Soviet Space Agency, it did come off. And, you know, I think it was a good thing.

HARWOOD: You know, the early—let's turn to Shuttle. The early politics of Shuttle obviously kind of took part during Apollo. Do you remember the early debate, and many would say the Shuttle is the most political space vehicle that we've ever had in terms of politics and budget defining what it finally wound up to be. Talk about the early days and the promises that were made, you know. Fifty-five flights a year! And, what went into

selling it that some would say, even at the time—some of the people selling it knew that wasn't realistic.

FUQUA: Well, one of the people that first talked to me about that was Wernher von Braun. And he was saying that, "You know, we threw away all this. We can keep all of it. We can bring it back. We can reuse it. And the more we use it, the more inexpensive it is. And the space program will be [an] ongoing thing. We will have uses for it," and so forth. And he was also a great salesman.

And then the officialdom at NASA—the Administrator and [others]—were, you know—had these wonderful projections and so forth. I thought it made sense. I'll tell you why. The Apollo Program was a program and an end in itself. It was never planned to go beyond the Moon. Once we landed on the Moon, there was no more use for Apollo. But what do we do? It was an end program, and I understand that. I understand the politics of that and what President Kennedy was trying to do, and I still applaud that. But the Shuttle was something that would be an ongoing program.

You could adapt it. You could use it for—as a means to and from space. And I guess we—and I included—put all or more of our eggs in one basket than...we should have at that particular time. But the economics of the Shuttle, we were going to build 7, 8, or 10 of them and fly them. And it would be so routine, it would be like flying an airplane. And the pilots would have, you know, hats on, scrambled eggs on their bills, like airline pilots. And that's the way it would operate. You'd turn it around real quickly.

Well, it didn't take long to realize that it took longer to turn that thing around than it did. And it was still very expensive to put up and so forth. And I still think it was the right way to go at the time. These programs are [like] the old saying, you have to crawl before you walk and you walk before you run. And this is a stepping stone. I think we will eventually have something like a [Lockheed Martin] *VentureStar* or something that will go

and come, whether it's manned or unmanned. And I think at some point you'll have—something will have to be manned, depending on what we do.

But ultimately, if our next goal is to try to get to Mars, we'll have to have something. And in the meantime, we've got routine access to and from space. So, I still think the Shuttle is—it's the only thing we've got, and I think it's the best thing we've got right now. And I don't see anything in the immediate future that's going to take its place.

HARWOOD: What do you recall about the, you know—the folks who so opposed it, like [Senators] Walter [F.] Mondale, Bill [William] Proxmire? Any specific recollections that—

FUQUA: Oh yes.

HARWOOD: —of the arguments—.

FUQUA: With [Rep.] Bella [Savitzky] Abzug.

HARWOOD: Yeah.

FUQUA: I didn't think they had very...[much space activity] going on in Wisconsin and Minnesota and in downtown Manhattan. I think some people have to be opposed to things, and I've debated Proxmire [several] times on this issue, and I didn't think he had very, very strong arguments. I don't think Walter Mondale had very strong arguments about this. But I think, by and large, we did, [and] the Cold War was still going on. We knew that, [or] had reason to believe that the Soviets were working on a similar type vehicle, which they were. And that, did we want to grant them this access that we didn't have? And even the Air Force had some interest in this [in] the early days... Or until they had to put up some money, they

[lost some of their] interest in it.

The [Congressional] votes were still pretty good. Every year I would look at the vote to see how we were [doing] as a kind of a thermometer of how we were doing, and it kept getting better. And that was—I was very pleased at that.

HARWOOD: When Nixon, who really was not a big Shuttle supporter (many would say that he was cost-conscious and, I've read, not real imaginative about space), he just pretty much saw the Shuttle as a political device. This is a way to keep NASA afloat. Give them the Shuttle. But don't fund it very well. Don't fund it, maybe, the way they want to have it funded. I mean, do you think that that kind of doomed it from the beginning? I mean, I'm just—I'm curious about at what point in the political process did you secretly know in your heart of hearts that what was being promised really could never happen with what Nixon agreed to?

FUQUA: Well, a lot of it—NASA came along with some innovative ways to do testing. We did concurrency. And that was a high-risk poker game. That means that you...postponed the test till the end. And if it works, it's fine. You're brilliant. But if it doesn't work and you've got to go back and redesign something, you've really got some serious problems.

And of course, the big leading thing on the Shuttle—or I think two of the leading things on the Shuttle: one was the main engine. And that was the first contract that was let. Everybody recognized that was going to be a very, very high-risk proposition. And the other was the tile. How do you develop this lightweight, ablative tile that can protect the Shuttle as it comes back in to Earth? Most of the other stuff was like an airplane—the cockpit, all the other things. I guess the thing I was concerned about was “Will it fly?” And I—everybody kept telling you, “Oh yeah, it will. It will fly. You can fly a bathtub, you know, if you angle it right.”

But I was never worried about the wings breaking off because we knew how to build those kind of structures. The engine and the tile, and getting the tile fitted on there correctly. And of course, it turned out to be a very, very and still is a very expensive process. But they've made a lot of improvements. But I felt that we did have to keep the program alive. One of the things we did, too—it was one of my insistence on this...in order to sell it—is that...we put language in the bill that you had to use existing facilities to the maximum extent possible.

My experience with engineers, and I love engineers, but they want to [develop] their own new play toy. And we didn't have to put the new infrastructure in at KSC. I mean, we had the other stuff. We could use the VAB [vehicle assembly building]; that was tall enough. And we could use the—modify the launch pads. We didn't have to go rebuild launch pads; you'd just modify them. We could do some of the work at Michoud. We didn't have to go build a new facility for that. They could use Stennis [Space Center, Mississippi] for testing the main engines. We didn't have to go build new facilities. Johnson could be utilized. Huntsville could be utilized. There were some that thought, you know, we needed to go just mothball these and go build new things.

This was very attractive to Congress, too, to say, "We're going to use, to the maximum extent possible, all the existing facilities that we have. It's not going to be a whole new building program. May be modifications, but we can utilize that." And then the—of course the Vietnam War was winding down. There was a lot of unemployment in California. A lot of engineers laid off. And there were a lot of people concerned about that. Where are we going as a country? And I think the Shuttle was one of the things that came along about that time to fill some of that void. At Cape Canaveral, there were tremendous layoffs of people. At Huntsville, and somewhat here at Johnson.

But in California, the—they weren't building the airplanes like they were before... [There] was [high] unemployment there. And this was—[employment] people look at their

pocketbook, and members of Congress look at their pocketbook. And Nixon...played games with you, but he never really followed up and vetoed the bill... And we tried to stay within the—in the limits of what we had and the program stretched out some and caused some overruns. And we had some problems with that later on.

HARWOOD: You mentioned the engines. And actually that contract was—when you look at the timeline, it was—the contract was actually awarded before the Shuttle was actually approved. And it went to California; and at the time, I understand from what I've read, that that was just a huge political fight that really upset Pratt [&] Whitney and their contingent, you know, in New England and that area. And that they were just mad! And, in a way, that was one of the most political decisions, to send—do you remember the politics of the time?

FUQUA: Yes. NASA had talked to us and said, "You know, this is going to be the longest lead time item that we have. It's going to take the most development." They chose who they thought was the best company at that time. Or had the best proposal. And they chose Rocketdyne [Division of Rockwell International] . And Pratt did protest—Pratt did have concerns about it. But there are protest processes you can go through, and they did protest (if I'm not mistaken).

HARWOOD: I think they did.

FUQUA: And there's a process that that [you go] through. And in the meantime, [NASA] did go to court or got permission to go ahead and proceed while the protest was being resolved. And the protest was resolved in the favor of Rocketdyne and upheld the decision that NASA had made. I don't know how—I don't think Nixon called NASA and said, "Give this to this company." Those are all very tough decisions to make, and they put together teams of

experts to evaluate these. And you have to basically trust what they say.

And then there were some other concerns about it, if I'm not mistaken, on the solids and what—whether to go with this type of a configuration or another type of configuration. And I think it was probably Aerojet [General Corp.] that was the other, if I'm not mistaken; and Thiokol [Chemical Corp.] prevailed. We tried to stay out of those things and leave it to the professionals to make the judgment, unless there was some real obvious hanky-pank going on. But I never found that. I always felt like NASA was very upbeat and up front about how they did these things. Because they knew they had a hot potato on their hand, and they'd better be able to justify it in the end after great scrutiny.

HARWOOD: But do you think politics factored in as long as it—you know, if they could justify it and there was a political consideration, I mean—

FUQUA: Well, there was also—

HARWOOD: —you—you're enough of a politician to—

FUQUA: No.

HARWOOD: —know that you can't eliminate the politics though.

FUQUA: Well, they had these source evaluation teams that went in and looked at these. The other you could've been—and we sat through the briefings that the companies had on how the Shuttle would look and the different—they had Boeing [Company] and Lockheed [Aircraft Corp.] and—and Rockwell and General Dynamics [Corp.] and I forgot who all else giving briefings. I remember, we were in Los Angeles, sitting in a motel conference room.

We wouldn't even go to a government facility. We were there at an independent place and a very private meeting where they were going over why they felt like their configuration was better.

Well, it was very confusing to a layman like me. They all looked pretty good! But it wound up with a kind of a combination of a couple of them. And of course, Rockwell had—or North American [Aviation, Inc.] then had done the command module for the Apollo Program. And McDonnell Douglas was involved. I felt rather comfortable and I think most members of Congress felt comfortable that they had justified their decision. It was—some designs were probably better than others, and we all knew that that was not going to be the final design.

HARWOOD: Do you recall, I mean, you know, part of the debate that always comes up with Shuttle and any of the manned programs is with scientists, and that contingent of scientists who say these big programs—and there's evidence of them killing smaller programs that can't exist because the big program, you know, it keeps NASA afloat but it kills off some smaller things. And do you recall scientists—even from the days of Apollo there were scientists who didn't like Apollo because they would rather you spend the money on, just launch some robots on some unmanned rockets. I mean, any recollections that you have of—

FUQUA: Oh yeah.

HARWOOD: —and tell me some of those stories.

FUQUA: Well, in the early days, you had people like Dr. Jim Van Allen from Iowa State, who [discovered] the Van Allen radiation belt, were very much opposed to manned spaceflight. And a number of other people. And then you had JPL [Jet Propulsion

Laboratory, Pasadena, California], which was basically in the unmanned program anyhow, and that was a NASA contract Center. And there was some controversy among them.

When I became chairman of the full committee in 1979, I made a very conscientious effort to reach out to the science community and say, “Listen, we’ve got the Shuttle Program; but also, I’m very interested in science. Now we don’t have an unlimited amount of money, but let’s see if we can’t come up with some of the best science programs and I’ll fight for you! I will lead a fight.” And we had one of those. One was the Galileo Program. (Then it was called the Jupiter Orbiter Probe, I think it was the name of it.) And the Appropriations Committee in the House had eliminated the funds for it. We had authorized it.

This was in the early days of the program. We also had Hubble telescope was coming along. And so, I met with the scientific community and I said, “You know, I don’t like to take on the Appropriations Committee. That’s not a very good venue to make friends and influence people with. But if you will give me some help, I will take them on, and I’ll put my reputation on the line, and we’ll fight to get this money restored.” There was always a certain amount of tension between the Appropriations Committee and the authorizing committee. This is a—this House Science Committee was the authorizing committee; and then the Appropriations Committee really writes the check.

So...we were supposed to set the policy and they were supposed to make sure that the money was spent in what they could spend that year and so forth. So, the Appropriations Committee decided to eliminate the funding. The Science Committee said, “Get me some support.” ...Members of Congress [started] coming up [to me] on the floor...asking, “What is the Fuqua Amendment going to do on this?” from people that never expressed any interest in the space program. And I started explaining it to them...and I said, “It’s evident that [we] could get some...grass root support. I’ll take them on!”

So, we did. And we won. And I thought that was a—I put myself where I told them I would do, and I would...I would fight for them. And I think there was always some conflict,

but we also had some meetings that said, “Listen, we’re in this together. You can’t have one without the other. You—if we don’t have a manned program...there may not even be a science program. So, I think you need to rethink that.” And I think we had a general (not everybody), but—I think we had a general meeting of the minds. But I think it is a very delicate situation.

I remember talking to Senator [Barbara Ann] Mikulski one time after she became chair of the Senate Subcommittee. And she said, “How did you balance all of these things?” And I said, “Well, I had a lot of universities in my district. I had Florida State University and Florida A&M University and the University of Florida. And,” I said, “if you talked to the biologists, they’re the most important people in the world. They keep the body functioning and so forth. If you talked to the chemists, they’d say, ‘We’re the most important people in the world. We are the only ones that understand all these other things.’ And if you talk to the engineer, he’d say, ‘These are immaterial; we’re the ones that build things and make it work.’ And then if you talk to the physicists, they say, ‘We’re the only ones that have the big picture. We’re the only people that understand all of these facets.’ Then you talk to somebody else and then somebody says, ‘If you can’t communicate, English is the most important thing’ or language.” I said, “They’re all important. And you just have to use your common judgment as to how [to balance] these things—and if you talk to a university president, he’ll tell you the same thing. He gets conflicts from everybody. So, you have to try to balance these out. It’s not an easy—there’s no formula.”

But I tried very hard to do that. And I think we succeeded. We had some good science programs. Unfortunately, they didn’t happen while I was still in Congress! But they ultimately happened. And very worthwhile programs.

HARWOOD: How are we for tape changes? Okay. In terms of the Shuttle, was there a point early on in those heated debates that you thought—did you ever have a thought that

maybe this won't get approved? Or maybe this won't go through? In any—.

FUQUA: I'm an eternal optimist. And our chief antagonist in the House was Bella Abzug. And she was a great lady in her field, but she didn't know very much about space and science. And it would—it played well in New York in among her constituents; and you have to go to New York and—to the Bowery and Chinatown and some of those to understand the people that she was representing. But Bella—if you have to have an opponent, Bella was probably as good a one as you could have in this issue. Now, if you were talking about women's rights and some other issues, that would—that was her forte. But this was not necessarily that.

So—and there were no other real big antagonist, no people of statute, I mean, that kind of statute to take us on. So, we won rather handily in the House. But we had to be very careful we didn't ask for too much; and we—and we didn't—we never got the budget cut when we got to the floor. And we had good bipartisan support, too.

The ranking Republican on the committee was a gentleman named [Edward Lawrence] Larry Winn [Jr.] from Kansas. And Larry was—we never took a bill to the floor that we weren't in total agreement with. And he could bring the Republicans along, and I could bring the Democrats along. So, we had pretty bipartisan—very good bipartisan support.

HARWOOD: What about the Shuttle's design, though, being a product of compromise? Budget compromise, Air Force compromise? You know, the Air Force getting their support and then them, they—you know, they put all their eggs on the Shuttle and saying, "Okay, well, then it's got to be designed to carry the satellites that we want it to carry." And those things fundamentally changing the design of the Shuttle. Were you aware of those pressures at the time?

FUQUA: Well, particularly the cargo bay was designed to meet the Air Force requirements. And you had to have a cargo bay of some size. So, I didn't find that to be—it was certainly better to design those things in at the beginning rather than later and say, "Oops! We need to go back and modify this."

That was one—I think was one of the major design changes. Not design changes but requirements. And then that had to fit what the lift capability would be and so forth. And then what orbits you would go to and so forth. But I think it turned out to be very good. We were able then to take big payloads or numerous payloads in the cargo bay, and I don't think it really has limited the effectiveness of the Shuttle at all.

HARWOOD: What about, though, those decisions? I mean, hindsight is always 20/20. But after *Challenger* (and we'll get into *Challenger* more in detail, cause we haven't even gotten you to reflect on the first Shuttle flight yet), but the politics of those decisions then almost later being criticized in some way for saying, "How could we ever have, you know, sat up there on Capitol Hill and thought we can just launch everything on the Shuttle and phase out unmanned rockets?" You know, later people would say, "Oh, how shortsighted!" But, you know, some of the people probably criticizing were people who supported the decisions at the time. I mean—

FUQUA: Well, politics is an interesting subject. And it's always...whose ox is being gored. You had people that made unmanned vehicles. They didn't want to go out of business, and they wanted a market for their vehicle; so, you had them stirring the pot. You had others that, I think, had legitimate concerns that if we have a problem with this (and I don't think we really focused on that there would ever be a major problem with the Shuttle). We had multitudes of them. We never had any problem with the Saturn Program.

We all thought that our understanding of how to build big, complex devices or launch vehicles, that we pretty well understand that. And we have testing before launch and so forth that reveal if there's any anomalies or things that might go wrong. So, we can depend on this. But if a company or an agency has been spending so much money to develop a launch vehicle that can do unmanned vehicles, naturally they want to protect that investment. And I don't blame them!

So, you come up with arguments to support your position. Now in politics you have to—as in life, you have to decide: What should we do? What is the right thing to do? It seemed to me at that time (and I'm one to publicly confess that I was in error) is that, "Why do we need to support all this other infrastructure? If we need more flights we can get on Shuttle, the more we can reduce the cost; and we don't have to have a whole stable of these unmanned vehicles that we really don't need. We can accomplish all of this on the Space Shuttle."

And I think then—well, now, we've been able to reduce the cost of launch considerably, and I think it can still be reduced even more. But at that time, we had tremendous standing armies that, both contractor people and government people here and at the Cape and all over, standing, watching each other do nothing. And I don't mean that critically. I mean that we were overstaffed and we didn't have the proper management; and that was not really one of the main concerns at that particular time. But we were trying to figure out how do you get this cost down, keep it safe?

And I think, ultimately...that has happened. But those are very tough, tough decisions to make. And on occasion in life, you make a bad call. And I think we probably should have kept some of the others, in retrospect, until we could do a better job and have more reliability...but get the cost down on launches.

HARWOOD: When the Shuttle finally flew, your reaction to seeing it lift off and you'd seen

all those Saturn launches, so it probably wasn't nearly as loud or as impressive.

FUQUA: Well, the most exciting, I think, to me was when the Shuttle came off the back of the 747 out at Edwards [Air Force Base, California]. I was there. We had a contingent of members of Congress. I'd seen videos of how this would happen.

HARWOOD: Are you talking about the test flights?

FUQUA: The test flight.

HARWOOD: Okay.

FUQUA: If that bugger didn't come off of there right or it took the tail end of the 747 off or wouldn't fly or come in on a dead stick landing, I'm used to flying in airplanes with engines to power it in. And I'd heard all this stuff and I wanted to believe them, but I wanted to see it first. And so, I was there with Congressman Winn. We were out at Edwards; and I remember that morning, both of us, when that thing came off successfully and landed, we hugged each other. I had been telling people, "They tell me it'll work." And that was probably the most apprehensive—as apprehensive as the first launch—

HARWOOD: Really.

FUQUA: —and—because it did fly, it landed like it was supposed to. I first thought they had not put the wheels down; they'd forgot to do that. And I couldn't believe it. "Oh no!" Well, they put them down (I think) in the last 5 seconds or something like that. And I was standing—[with] Jim [Dr. James C.] Fletcher...who had been NASA Administrator before.

(This was his first tour; he was—before his second tour.) And he was there and he's hollering, "Wheels! Wheels! Wheels!" as if they could hear him. But I felt the same way. But I had been briefed about that.

But Larry and I—we both had tears in our eyes and we hugged each other. You know, gee, you know, well, it worked. And we're lay people. We're not engineers. We have to take the word of all the smart people around here that tell you that all this is going to work. That was one.

The other was getting the three engines to work. We had a time getting those engines to work! And I remember (it's kind of a funny story): It was a cold January day and we were at Stennis Test Center...in Mississippi. It was a cold day and I had a cowboy hat because the wind was blowing; it was a cold January day. Wind blowing. And we went down there...and I was wearing that cowboy hat, and that was the first time we had a full three-engine test that was successful. And that was a major—that was another major concern: "Is this engine going to be able to work, all three of them at the same time?"

So, then they had a—it was like in February...we had a test at the Cape. It was a cold day, and we were up on top of the VAB... And I wore that cowboy hat that day, and the test went great!

So, we get to April; it's getting warm in Florida then. Everybody's telling me, "You've got to wear that cowboy hat." It's a wool western hat; and I had that hat on, and of course, perspiration's coming down my face and I'm sweating—not only because of the heat but also because of whether that flight's going off or not. And it was successful. I wore that hat up until, oh, the last few flights that—as a—just a good luck charm.

HARWOOD: You mean, even to this day?

FUQUA: No. I retired. I still have the hat! But I haven't worn it. Someone suggested I take

it back to wear it for the John Glenn flight last year, but I didn't.

HARWOOD: That's interesting.

FUQUA: It was a little warm then, too.

HARWOOD: It was a little warm. When the Shuttle first, you know, flew that first time and then, as you said, how soon after that—I mean, you know, after four flights, it's declared operational. But operational then was not what you all had envisioned it being back in the '70s when the political fighting and the budget. I mean, how soon did you realize, "Boy, this is not going to get down to, you know, \$50 a pound. This is not going to get down to a flight a week." I mean, when did that realization come?

FUQUA: Well, I think along about that time it occurred to me that this is—we're still dealing with a very hostile environment. It was called space. And it will never be routine. I think that was wishful thinking on a lot of parts. I was not one of those who early advocated that that was even ever going to happen. But, I think I realized, and a lot of other people, that this is, still have a very precarious situation here. Turning it around, getting it [ready] and the amount of time it's taking to turn the Shuttle around. The complexities of the systems. Even then, they were old. The computers and so forth were not the latest computers. The redundancy of test and so forth. All of that led me to believe that this is still a very complex thing.

HARWOOD: You just thought, "Okay, it may cost more than we expected but it's still worth fighting for?"

FUQUA: Yeah. I think it was. It had the flexibility that we could go up and retrieve satellites, bring them back, put satellites out, test them, then release them. I thought then, and I still think, that that has a great deal of appeal. Now if you want to look at the cost for commercial [space], and as we've gone the other way, [they are] building bigger satellites. The method then was big, big satellites; and it was not only in that. I remember in the energy field, we (the Science Committee) were dealing a lot with nuclear power plants at that time. The big theme then was to build...power plants [at] about 100 to 200/300 MW plants, and then they were going to build like 1500 M[W] plants. And the scale-up was just too big. And when a 1500 M[W] plant goes down, you can shut down the whole State of Texas!

They rethought this and said, "Hey, why don't we build smaller so you just plug them in? If one goes down, you don't blow out the whole system." And the same thing with big space projects. I think [NASA Administrator] Dan [Daniel S.] Goldin has done a great job in faster, cheaper. Every program, you take Galileo, Hubble, all those big programs were over \$1B, including the early Mars mission, Viking. And if something happens, you've lost not only 10 years of a researcher's and developer's time, but you've lost a lot of money.

So, I think [they have] gone back and in the commercial area, which I think has a tremendous potential... It's just now taking off, and it is the fastest growing part of the whole aerospace industry, commercial space. Then I think you've got to look at low-cost launch and low-cost birds. If something happens to it, jettison it, put another one up. And you don't need the complexity of some of those.

But back at that time, that was the predominant thinking. That we could build all these big, complex devices. And I think they've rethought that now. So, it's still, for bigger programs and others, the Shuttle is still, I think...can be very supportive for those.

HARWOOD: The—I want to mention one thing that's a reference. That according to the historian who wrote this up, they mentioned the space tug, but they also said that the last

reference they could get to the space tug is from 1973. And they're wondering what became of this project. Do you recall the space tug? And I think they mentioned a meeting that you had with someone about the space tug (I think it was George [M.] Low) talking about the space tug. And I'm wondering what happened to it? Did it kind of transition into the inertial upper stage [IUS], which could get the big payloads up there but not bring them back? I mean, what was this—?

FUQUA: Yeah, as I recall, they were talking about something that would be like a tugboat. Take it from the mother ship and take it to a certain place, and then drop it off and come back. And you could retrieve it. Or you could jettison it. But I think the IUS finally was the winner, which was an Air Force program and one of their contributions. And that became a very expensive program... And as I recall, it was to be a small vehicle that would take something out to geosynchronous orbit, leave it, and come back; and you could—the tug would be reusable. You could bring it back and—

Then there's some concern about: what kind of fuel would it have in there? And did you want to land with that type of fuel onboard a Shuttle? There were a lot of safety concerns about that. And probably, as I recall (and I don't remember the exact figures), it was going to be very expensive to do that.

HARWOOD: Do you recall what killed it or—?

FUQUA: We were looking at a throwaway-type smaller vehicle.

HARWOOD: I mean, do you recall, like, there being a conscious decision to kill the space tug? Or did it just kind of—?

FUQUA: No, I don't think it was ever authorized. I think it was one of those proposals, and you get a lot of proposals. Some better than others. There was also another vehicle, smaller than the IUS, that could take objects out to geosynchronous or something of that type. And I don't remember who built it now. I remember it was...not a—very big, and you could stack things on to take care of whatever the payload you were trying to put out there. But I think it was probably too expensive to do that.

HARWOOD: The Shuttle's flying. And I'm just curious. Talk about politics in space: [Senator Edwin Jacob] Jake Garn and [Rep. Clarence William] Bill Nelson. Do you recall the politics behind them lobbying to fly? And let's start with Jake Garn, because he was first. I mean, do you remember what your first reaction was when you heard he wanted to go?

FUQUA: Let me say Jake Garn and Bill Nelson are both very dear friends of mine. I like them both. Yes, I was aware of what was going on. And [James M.] Jim Beggs, who was the NASA Administrator at the time, and I expressed to Jim my thoughts. And they're still my thoughts today.

I said, "Jim, I don't want to go. Even if you told me I could go, I don't want to go. And I'll tell you why. I don't think I have any business being there. This is still a very hostile environment. I'm not even sure you ought to have the Teacher In Space Program going. But I've got a full-time job being a member of Congress and these other guys do, too. And I don't think you've got the time to devote to proper training when you've got a whole cadre of astronauts that are professionals in this business, mission specialists, and so forth; and I don't think I ought to bump somebody to go take a ride in space. I would love to! I'd give my right arm to go, but I don't think I have any business doing that. And that's my position. I'm not going to raise hell about this, and I'm not going around and make speeches

about this. But that's just my personal feeling." And it had nothing to do with Jake and Bill; and they're both good friends then; they're good friends now. But that was my position on it.

HARWOOD: But they got to go.

FUQUA: They got to go.

HARWOOD: In fact, right after Bill Nelson's flight, obviously, the darkest day for the Shuttle Program certainly. Very soon after that, the *Challenger* disaster. Were you at that launch?

FUQUA: I had gone down on Friday for the launch. I think the launch was going to be—either Thursday or Friday. I think the launch was going Friday or Saturday, I'm not sure. And I was flying with [Michael J.] Mike Smith, flying some approach shots that night. John Young was along. This was on the Shuttle trainer. And you could see the weather coming in. And so, it was obvious that [there is] not going to be a launch. I think the launch was the next day; I'm not sure. The next afternoon or something like that.

So, when we realized—and then after we got back on the ground, we...landed probably around 9:30, 10:00 at night...out at the Shuttle landing strip. And I think, talking to George [W. S.] Abbey or somebody at that time, I said, "You know, we're probably not going to be able to launch." And I had a group of—members of Congress down there with me. And so, we decided that probably it would be better to go on back. We had a Air Force plane...down there. And...I had something on Monday (I don't remember what it was) back in Washington. So, I was not going to be able to stay. So...the next day, we went on back.

I'm watching this in my office on Monday. They're trying to launch again. And... [A.] Scott Crossfield, who worked on the committee staff—Scott was a former test pilot for North American and was the first guy to do twice the speed of sound and the first guy to do

three times the speed of sound. He was a test pilot. And he...worked aeronautical programs for the committee. Scott's in there briefing me about this program. And I'm watching the closed-circuit TV.

I'd been hearing—there had been several things that happened before then. A wrench was left in, I think—in the Nelson flight. Left in an engine. And there had been some sloppy things going on that I was very concerned about, that people had gotten lax and not paying attention. Well, this day, while Scott was in there trying to brief me and I'm watching this closed-circuit TV, somebody had wrung a bolt off on the door hatch and they couldn't get it open. ...They have a little auxiliary (like a doctor's) box that [they have]—a doctor carries around. They had a little emergency kit there. They had a power tool in there, and the battery was dead on the power tool.

So, they had to...send somebody from over there, over to the industrial area to get a new tool and drive back. And in the meantime, the weather had come in, so they scrubbed the launch that day. I am livid! And the only person that I could take this out on was poor Scott Crossfield. He didn't have anything to do with it, but he's having to listen to my tirade. And I'm calling people. I'm saying, "You know, this—if somebody had wrung the bolt off, you're supposed to sign for it. Somebody, you know, that this is done. And that was just so out of procedure!"

I'm livid that this is going on. I just couldn't believe this! And I'm calling to find, you know, what in the hell is going on down there? And so, the next day, I am in there with another meeting going on with the director of the committee staff, and we see this when they launch. And I knew immediately that, you know, there was a serious problem.

I had been down there and had dinner with them. ...We had been...in Japan at a meeting. I was coming back through Hawaii; and they had just turned on a new telescope there in Mauna Kea, the National Science Foundation. And I had been up to there and they had given me some photographs of Halley's comet. And so, I'm there talking to...Ellison

[S.] Onizuka, who was on the flight and is from Hawaii...and from the big island of Hawaii, where this telescope [is] located. So, I'm telling him about it; and he said, "Well, that's one of the things I'm going to be doing, is looking at Halley's comet and making some pictures of it." He said, "Could I—have you got the pictures with you?" And I said, "Well, they're down in the car in my briefcase."

So, I ran back down and got the pictures. There were about three or four pictures of Halley's comet. The first pictures they'd made of Halley's comet! And so, I gave them to him; and he said, "I'm going to take them with me, and I'll give them back to you when I get back. I want to see—compare what I see with what's here." And so, you know, I knew all of them. I didn't know [Sharon Christa] Chrissy McAuliffe or—or Mike [Gregory B.] Jarvis very well, but I knew all of the others and had been up flying and so forth. It was a sad, sad experience.

It shouldn't have happened. And if you'd have made a long list (and I had) of all the things that could go wrong (and I had done that), that would have never been on the list. I was always worried about the main engines. And that was—when that thing hit MECO (main engine cutoff), it was a relief to me. And that was not one of the things I was—on my list of worries.

HARWOOD: Did you—do you recall, you know, the committee's appointed and the investigation process starts, and obviously there was some Congressional oversight also going on at the same time. But do you recall when you first became aware of, you know, the memos and the O-ring issue? I mean, when did you become aware of that?

FUQUA: Well, when it was going on. President Reagan appointed an investigating panel. And he appointed former Secretary of State [William P.] Bill Rogers and he'd been former Attorney General. There was a tremendous amount of clamoring in Congress that, "We've

got to go and investigate this.” And in the Senate, Senator [Ernest F.] Hollings was chair of that subcommittee, and he was chomping at the bits. And I talked to Bill Rogers, the chairman of the President’s Commission, and I said, “You know, I’m under tremendous pressure. And at some point, we’re going to have to do something.”

So, we talked about it. He said, “I don’t think it’s productive to have two investigations going on at the same time.” I said, “I agree. One, they were going to put them under oath and we’d be putting them under oath. And it—we could jeopardize...the thoroughness.” And he had the more facilities to do a more thorough investigation than we did.

And so, I talked to the ranking Republican at that time, and—which was Congressman [Manuel] Lujan [Jr.] from New Mexico. And I said, “You know, let’s meet with Rogers and see what we can do to try to keep this thing under wraps. And then when he gets through, then we’ll have Rogers come up. That’s the way we did it...when we had the Apollo fire.” And I said, “We’ll—then we’ll have Rogers come up and give his presentation. We’ll grill the witnesses. We can do whatever we want to do.” In the meantime [that’s what] we did.

And then Rogers would come up and we didn’t want—he didn’t want the press there. We didn’t want to have a formal hearing. But we would meet in my office, unofficially, and I would invite the senior Republicans and Democrats on the committee, and particularly the one that dealt with the Shuttle Program; and he would give us a briefing of what was going on and so forth. So, that’s when we first heard about the O-ring and some of the memos.

I was aware that there were some communication problems going on of who’s in charge. Who says no/no-go on a launch? And it was very evident. And then some of the laxity that had gone on before there. I was down there with one of the astronauts, and I won’t reveal his name because he’s still active. But he was driving me out there one day or one night, and he was saying, “You know, there’s been a lot of morale problems out here

now.” And I started inquiring about what was he hearing. And this was with the workers out there at the Cape. And so, I became [aware] and that was two or three launches before the...*Challenger* accident. Anyhow, we did that.

In the meantime, I had planned to announce at the 1st of March that—or the 1st of February that I was not going to run again for Congress. And I had talked to some people that I was seriously considering that. When the *Challenger* accident happened, I said, you know, “I can’t do that. You know, I can’t—I don’t want it to appear that I’m not running or that I had something to do with it or I’m getting out or something of that type. I don’t have to answer those kind of questions. And so,” I said, “I’m going to wait a while.”

So...I said, “I need to do it soon, because we have a primary in September and I need to make some kind of announcement pretty soon so people can run for my seat.” So, I postponed it to—into March. In the meantime, as soon as I announced, the headhunter came to see me about some jobs. One of them was the AIA (the Aerospace Industries Association)...becoming their president. That was 10 days after I announced that I was not going to run again. In the meantime, Rogers was winding up with—or the committee was still going on. But they were coming along.

So, I had had some informal talks with AIA about taking over their presidency. And so, that was in addition to some other job offers that I had. But that was about the only one I was really interested in. ...That was to happen when my term ended—to remove any conflict of interest because the companies that were involved in the Space Shuttle were members of the Aerospace Industries Association. So, when we got ready to have...our review of the Rogers committee findings, I had secluded myself from chairing the hearings.

So, I turned it over to a man who was going to be the next chairman, [Robert A.] Bob Roe from New Jersey, who was the ranking person on the committee. And Bob actually conducted the hearings. I made sure that I didn’t have anything to do with that, that might cause any feeling that I was being unfair or overly fair or prejudiced toward one of the

companies.

HARWOOD: Do you remember, though, what your thoughts were when you know, many people have expressed it as such that, and you mentioned this earlier, about you—NASA would come to you with budgets but you assumed the safety.

FUQUA: Yeah.

HARWOOD: You know, every—and I've heard people say, too, and even some of the media at the time saying, you know, the real—what upset people so much was this perception that NASA was the one agency that was above the backroom politics and the smoke-filled room and cutting deals. That they seemed somehow above that. And that what came out made people question that. And you think, “Oh no, not them, too!” I mean, what—that was one reaction. Did your reaction have some of that in it, or what?

FUQUA: Well, I think—I remember when NASA was created. I was in there at the creation, almost, of NASA. And it was a group of young engineers with a mission, and it was a new agency. There was such vibrance and challenges that—and people were so young. I remember going to launches and I wondered if some of the launch directors and engineers even shaved every day! You know, were they old enough to do that? Now you go to a launch they're old gray-haired guys there. But then it was so young.

And you go back and look at some of the pictures of the people; and, gee, how young they were back then with tremendous responsibilities! I remember when George Low was a young man in—here at the Johnson Center and I was very impressed with him. And Joe [Joseph F.] Shea and a lot of other people that were around at that time; and Rocco [A.] Petrone and people back in that vintage.

But then NASA grew older and more bureaucratic. And that happens sometime when you do it. Nobody really challenged them because, after all, they were king of the hill! They had been successful. They had put a man on the Moon and successfully brought him back. They had done all these challenging things! So, who was I to run out and say, “NASA, you don’t know what you’re doing.” But I was getting the feeling, before the *Challenger* accident, that there was a blasé attitude starting to develop about safety. Now none of the crew talked to me about that, because I had private conversations with them. “Do you feel comfortable and so forth?” Yeah, everybody did. I’m not even sure they were aware of some of these things with the O-rings and the weather—and the temperature and the—and so forth.

And were we really trying to find out what caused these things to happen in previous flights? But I was more concerned about wrenches left in the engine and the things of that type, which just blew my mind that those kind of things could go on! So, I was concerned, as I said previously. I was—one of the astronauts was driving me out to the Cape and we were going by, and he just started, matter-of-factly, mentioning this thing to me. And I became concerned about that and made some inquiries about it. And they were having some labor problems or contract problems at that time. And I thought, well, maybe that’s part of it. There was a lot of overtime going in at that time. But I couldn’t believe!

And then when had the door handle problem, when—and then not having the proper tools! That’s just lax. And I became even more concerned then about, you know, “What’s going on?” And unfortunately, we had the accident. It wasn’t related to any of those matters. But it was a—and it’s something would have probably have happened sooner or later.

HARWOOD: Did—you know, there’s a committee that was primarily oversight of the budget but that goes to other things. I mean, Congressional committees can pretty much do what

they decide to do. What kind of—and I know you left Congress. But what do you see as checks and balances? I mean, is there anything that you think your committee could have had in place to uncover things like that? And is some of that there now? Do you think that there's more, you know, oversight? I mean, you can't know about secret memos and—but what did you see as a politician? I mean, you obviously search your soul and say, “What could we do?”

FUQUA: Well, when—you're kind of like a fireman or a doctor in an emergency room. When there's an emergency, you know, you try to find out what the problem is and try to take care of it. Back in the early days of the Shuttle—well, not in early days. But as it was going into production, NASA comes in and says, you know, “We've got so much for the Shuttle,” and “Is that enough money?” “Oh yeah, that's plenty of money.” “How much carryover have you got from last year?” And you're going through all the routine questions you ask.

You automatically ask them. You come to Johnson and say, “How much did you ask Headquarters for?” You routinely get those numbers. “How much?” to Kennedy. “How much did you ask for?” “Contractor, how much did you ask for?” and then you look at the final budget, and you say, “Well, they cut you \$300M. What impact is that going to have?”

Well, NASA comes in and says, “Everything is okay.” Contractor comes in and says, “Everything's okay.” And then about—that's in, like, March. Then about June, they come to me and tell me that, “We've got a little cost overrun problem.” “What?!” “Yup, we've got a cost overrun problem.”

HARWOOD: And this is June of what year?

FUQUA: Oh, this is probably in...the late '70s, early '80s. And I said, “What?!” “Yeah,

we've got a little cost overrun on the Shuttle." And so, I said, "What happened since you came in here in March and told me everything was okay? And now, 3 months later, you've got this tremendous overrun." "Well, we just found out about it." "Yeah, um-hmm. I believe in Santa Claus, too." So, we...[have] got to go to the floor to get this money and my reputation's on the line, and I have to explain it to all the other 434 members of the House why I told them everything was okay earlier. So, we put a—we started an investigation of our own. "What happened?"

And we found out that—and it was primarily [at] Rockwell that was having the problem, that when something happened on the [plant] floor it was about 6 [to 9] months before it ever wound its way back to NASA [Headquarters]. It was actually 9 months before it ever wound its way back to NASA. So, this problem had been festering down there and...[the process] not letting it get back to NASA.

So, we held some hearings on that. "What is going on?" And then we had them institute a procedure that if something happened on the floor, there was a red flag went up and somebody, somewhere up the line was supposed to say, "What's going on?"

HARWOOD: This is when the Shuttle's being built?

FUQUA: Yeah.

HARWOOD: Cause I have written down that there—in 1979, they asked for supplemental funding.

FUQUA: Well that was probably the year.

HARWOOD: And—that was probably.

FUQUA: Yeah, and—

HARWOOD: You also did it in 1990—1980.

FUQUA: Yeah.

HARWOOD: I think they did it real close together there, asked for more and then more.

FUQUA: Right. We had a major problem. And yet they came in '79 and said, "Everything's okay." I mean, it—at the early hearings in like February or March. So, we went back, reviewed those. Now safety had not—we kept asking about safety, you know. "Is this okay?" And, "Do you feel comfortable with all of these things?" That's tough for a Congressional committee to find out those kind of things. And even if we'd have had a—why would we have had an investigation in the first place?

First of all, you usually have an investigation to try to find out why something happened. It's usually after the fact. We did have, as I said, open communication with the astronauts. Any time they felt uncomfortable about something or some procedure, we had one when they were trying to put an Agena in the Shuttle bay as a tug-type thing. And what happens if you bring that back, if you have to make an emergency landing. What do you do about all the fuel in there? There was some cockamamie idea that you could vent the fuel out the back end of the Shuttle. And I remember sitting over here in one of the hotels with three of the astronauts that had some concerns about that.

And I took their concerns to heart, and we went back and worked the problem. But the fact of the matter is, on what happened to the *Challenger*, I think it was a culmination of things that—poor decision-making process, who can call off a launch or who can say go/no-

go? And they had a committee doing it, and nobody had a final authority in it. And there were some questions raised by that. I talked to a number of people about—off the record about the process that they went through in trying to make some of these—the decision-making process at that time on launch and whether to launch or not to launch.

HARWOOD: What about the Rogers Commission spreading the blame around and even saying, “Hey, there’s some blame that can be on Congress as well for funding it the way it was funded and maybe setting up,” as we said, “all the eggs are in one basket.” And was there added pressure? I mean, they—you know, they mentioned the media, too. You know, the pressure of saying—the media making fun if you delay.

FUQUA: A lot of pressure.

HARWOOD: You know, pressure all the way around.

FUQUA: Yeah, yeah.

HARWOOD: I mean, you know, to this day you ask whether there’s an important visitor at a Shuttle launch or you’re trying to launch because, you know, Hillary Clinton’s there. You know, that kind of thing gets asked to this day. But what about the role of Congress? I mean, do you see a role of the political process? And let’s take it out of the context for me, if you could, of the broader thing. I mean, I know there’s a lot of other influences and you’ve talked about a lot of those. But just the political part of it. And what role do you think that played?

FUQUA: Well, Congress is in a tough job, trying to—because of the staff. We have—NASA,

when they would come in with a budget, would probably have 25 people there with just the controller. I didn't even have a—one number-cruncher on my subcommittee. And they could bamboozle us with numbers so fast it would make your head swim! I finally got a number-cruncher on the committee, and I had one against an army of people!

It's very, very difficult to get back down after you get from the major numbers back to the sub-numbers and the sub-numbers way back down, how you can shift money around and so forth. It's very tough for Congress to compete against the expertise and the people that NASA have. So, you're at a disadvantage and you have to have a common trust between the two. That they're being square with you.

And I think you shouldn't be in an adversarial situation, where they're afraid to come and talk to you about it. Say, "Hey, we've got a safety problem here, and we need to talk to you." Now we did have some discussions about safety concerns early on, about radio transmissions that could jam the communications to the Shuttle and things of that type. But it—the committee staff, probably for the whole NASA budget, probably there are only 6 or 8 people. And look how many people NASA have! Or just at the Johnson Space Center here. So, it's very difficult to think you can outsmart them.

But there has to be a common trust. And I think we've had a good relationship with NASA, not always that they've been happy and maybe there's also a concern, too, that Congress meddles too much. My feeling was that we were not there to micromanage NASA. That's what they're hired to do. They're professional people. I couldn't go in and tell a Gene [Eugene F.] Kranz that, "Hey, Gene, you can't launch today." Or whoever was the program manager that, you know, "You can't do that." I have no expertise to do that.

But I think you have to—we are there to try to set overall policy and to try to make sure that the public interest is carried out. You have to have faith that they're servants of the people. They're spending the money as wisely as they can. We may differ on that. But with a big budget like that, I don't think Congress should try to micromanage what

you're doing.

You're trying to say, "We have a space policy. Our policy is to do this: We're going to launch Space Shuttles. We're going to carry programs in." I can't tell him how to build a Hubble telescope or how to operate one of their sophisticated missions. That's what their expertise is doing. So, I don't think Congress is necessarily capable of getting into what an O-ring—now, if you find out about it, you say, "Hey, I've heard," and you pick up these things. You get—NASA employees would write me letters sometimes about—saying—a lot of it was somebody lollygagging at the water machine too long or something of that type.

But sometimes you get letters that something is going on. I always tried to check them out. Sometimes I found out it was probably the person was disgruntled or something of that type. But I always tried to check them. I didn't get that many letters, but sometimes you'd get anonymous letters from people that—and they have a way of letting their local Congressman know that something's going wrong. We had staff. We'd check into those things. Most of the time they were, maybe, exaggerated or not of the magnitude that we [worried about]. But you have to have a common trust, I think.

HARWOOD: Well, did you feel that common trust was violated? I mean, in some way you had to think—I mean, some of the testimony had to just be gut-wrenching for you. I mean, and—for many people, to think some of it that they knew, and some of them were even arrogant. I mean, some of those middle managers. I mean, you had to feel that trust was violated. And then I know you left Congress, but did—do you feel that it's been rebuilt?

FUQUA: I think it has. I think the—there's been a more keen awareness. I think we have [learned] you can never let down. That's a constant problem [of] safety and making sure that, you know, somebody's life is at stake here. Not only their life but also the whole program.

What did I feel? Betrayed? No, not really. I don't think senior management at NASA knew all that. I think they were shocked at what was going on. I think that management has got to make sure that they have an operating environment that, instead of punishing somebody for reporting something, they'd almost reward them for saying, you know, "You need to let us know this."

When I got into industry, I found that a lot of people doing things they shouldn't be doing because they thought they were benefiting the company. They were harming the company! And people started going through training programs, ethics programs and [the like]. "What is ethical and what is not?" And I went to some of those to see what they were—what they were teaching. I was very impressed.

I don't think anybody was doing anything illegal. I think it was—it can always be a miscommunication or a misinterpretation, or my idea may not jibe with your idea of how we do this. But there has to be a system in place that employees feel like they can go somewhere and not be penalized or punished for discussing, openly, you know, "This manager and this manager have a different view of this, and it's very serious. How do we resolve these differences?" And I think it's very important.

HARWOOD: Okay. Okay, I'll let them change tapes. And then we'll—

VOICE OFF CAMERA: Okay. We're rolling.

HARWOOD: We had talked about *Challenger* and you were saying that—but even before the accident you'd made the decision to leave Congress—you felt you'd—you've been there long enough—and to move into this position. Tell me about the AIA and what you saw your role there and how—did that role, in some way—do you think you still, obviously, played a role—and you—I guess you retired from that group last December of 1998. But how in that

role did you still have a role in serving America's space programs?

FUQUA: Well, of course the Aerospace Industries Association is the premier trade group of all the major manufacturers in the aerospace business. We have about 50 to 60 companies (depending on whose merger and so forth is taking place); and it's a CEO [Chief Executive Officer] organization. So, you're dealing with the CEOs of the group that make everything in the aerospace business plus space as well as military systems, commercial airplanes, commercial satellites, all of them. And about... \$170B industry.

I always had good relations with the NASA Administrator. Kind of a funny thing. I never knew where the NASA Administrator's office was. I knew it was down at NASA Headquarters, but usually he came to see me. And after I left Congress, I realized how my role had changed and I went to see him on bended knee.

But I've had very good relations with the NASA Administrators, and most of them I had known in the past. Dan Goldin when he was at TRW [Inc.]. And the—usually they used me as a kind of an interface. Rather than talk to 15 CEOs about an issue, many times they used me as the intermediary. And then President Bush appointed me to the [Norman R.] Augustine Commission [Presidential Advisory Committee on the Future of the U.S. Space Program (1992)] that reviewed the space program. I've been on a number of committees.

I was on the NASA advisory committee for a while. A very interesting experience from having been in Congress and then in industry, and looking at it from a different perspective. So, I've had a very close working—but not as close a relationship as I had when I was in Congress, because I don't review all their budgets and programs and so forth. But I've had an opportunity to work with NASA on particular—several committees that Dan has asked me to serve on (Dan Goldin). And he has called me many times for advice and how should he do something? Or give him my 2 cents' worth. And so, we've had a very, very good relationship. So, I feel like I've been—it still hasn't left my system. And I hope it

never does!

HARWOOD: Would you consider yourself an expert on the politics of space? I mean, obviously. And how do you—if you have to sum up for somebody “the politics of space” and what that phrase has come to mean over the years—

FUQUA: Well, anybody that’d tell you they’re an expert in politics is probably not telling you the truth because I’m not sure there’s anybody that’s [an] expert in politics. It’s a kind of trial-and-error. But I think I somewhat understand the system, and I can—it doesn’t take you too long. Some of the issues are still the same. Some of the players are the same. But it’s—I’m not sure I’m an expert in that.

HARWOOD: You very quickly became involved with the Challenge Center—Challenger Center very early on in its existence. Why? Why did that appeal to you?

FUQUA: Well, I knew all the wives. And I was down here right after the accident happened. I’m sitting in June Scobee’s house. (Dick [Francis R. Scobee] was the commander.) ...My wife and I were here, and we had known them, and the next thing I know, the cat’s crawling in my lap. And she said, “You’re the only person that that cat has crawled in their lap except Dick Scobee.” And I’m not even a big cat fan. But the cat was crawling around.

And, of course, I knew the wives as well as their husbands and felt, you know, it was kind of like a family. And we talked about a lot of people were trying to do memorials and build a rock monument or something of that type. And we talked about something that they would like, and we decided, you know, why don’t we do something living rather than build a stone monument that birds rest on? And they came up with the—with a lot of help, with the idea of the Challenger Centers.

And I was involved from day one in helping them get that going. I've been on the Board. I've been treasurer of it and still on the Board now. And I think it's a wonderful, wonderful idea and a great tribute to a group of wonderful Americans.

HARWOOD: How do you think that the Challenger Center and what it stands for helps further America's space program?

FUQUA: Oh, bringing young kids in, in a informative age and giving them the opportunity to fly a space mission. When you go back (and I've done this quite a bit in education; I've been very interested in education and particularly in science and math and engineering), and I've done this to kids or people that—that have [got] their doctorate degree; and go back and ask individually, "What inspired you to do that?" It was either "a parent" or "a teacher" or somebody in their life inspired them to do that.

And if you're exposed to this, one of the things we need more kids to do is to study more math and science. And when kids get at a certain age when they're making those decisions, now they may want to play soccer or they may want to play in a band. They may be interested in a boy or a girl. They may have a lot of other competing interest out there. And if we can somehow spark the imagination of these young people that, "Yes, gee, if I want to be an astronaut, you know, I'd better learn math and science." Or, "If I want to be an engineer or a physicist or somebody." ...I think it's a great way to inspire young kids to go into science and math.

HARWOOD: Also, Space Day, which I take it the organization—the IAI—AIA was involved in creating Space Day, correct?

FUQUA: Correct.

HARWOOD: And how do you see that? I mean, how has it grown since its inception? How do you think it reflects the space program?

FUQUA: Well, it's—I think it's a great way to stop and say, you know, "What are we—can we do?" And we still have to promote an awareness of what space is—what space is and the importance of it. There was a great article (I think) in *Parade* magazine last week about the importance of space and what it can do. (Maybe it wasn't *Parade*. It was—maybe it was one of the other papers. I'm not sure.) Some of the things that we've learned from space. And I think people—there's a new generation.

A new generation's coming along all the time. And I think it's a continuous trying to remind people the importance of it. And I think most people, most Americans, feel like that...yes, they want America to be the premier country in space and space exploration and what we could learn from it medically, exploring other planets. Is there water on the Moon? Or is there water on Mars? We are an exploring country. We have people trying to fly higher all the time or go faster, whether ground or in the air. We—we're climbing mountains.

My wife's sister climbed Mount Kilimanjaro. You know, it's a—it's there. And she's not even a mountain climber! But we have those [people] that want to do that. And exploration is something that I think we have to—we have to get people inspired about. Remind them what it's all about.

HARWOOD: Well, the next big mountain (so to speak) for NASA is Space Station. Think back to when Space Station first came up before your committee, what you envisioned it could be. What was your level of support for it? And—versus what it's now appearing it's going to be?

FUQUA: Well, I thought it was a—Space Station was then and now is a logical extension of the Space Shuttle. We can still use the Space Shuttle to go to and from, service it. As I mentioned earlier, it's not an end in its own like the Apollo Program where you went and it was over, and there's nothing else to do unless you wanted to rediscover the Moon. Further, there's nothing wrong with that. But this is a further extension of what the Space Shuttle can do. And, yes, it came up; and...we authorized this back in the '80s when Ronald Reagan was still President.

Of course, it's gone through a lot of configurations that have been better. I think the early ones were too complex. They've tried to simplify them, and I think it's a lot better now than it was back then. And it looked like it's going to, with all things happening right—it's going to come into fruition.

HARWOOD: Did you think that we'd be teaming up with the Russians?

FUQUA: I—

HARWOOD: I mean, could you have ever envisioned that for Space Station?

FUQUA: Yes. I felt all along that if we had a Space Station, if there was a Space Station, that it would have to be an International Space Station. I didn't think the United States could afford to do a whole Space Station by itself. I questioned whether the—how much—the amount the Russians would be involved. (Of course, this was back in the '80s when the Cold War was still on.) But I did envision the Europeans and the Japanese and some other countries being involved. Canadians being involved. And I think it's—I think it's great!

I think science has transcended political boundaries for many, many decades. And I

think it's a—it's important that we try to do things together, and that something of this magnitude certainly lends itself to an international opportunity rather than just one country or one small group of countries going on their own.

HARWOOD: I want to have you reflect a little bit on some people and on some institutions that kind of factor into your career in politics and space. And we'll start with some of the NASA Administrators. Jim Fletcher. Just your thoughts.

FUQUA: Wonderful, wonderful man. He was there twice and was, I think, a great guy. He was a little bit naïve about the political process; but when you went and talked to him and tried to explain it to [him], he was very—he was a very quick learner and could—and would very well respond. And he was a wonderful person. Had a great credibility.

HARWOOD: Bob [Robert A.] Frosch, who followed him.

FUQUA: Bob came there as, I think, somewhat also naïve about the process...and came there more as a scientist and not familiar with this—with the manned program but more as an oceanographer. But he did a good job in a very troubling time at NASA when—when we were having some budget problems. Things were not going well. But...Bob was a good guy. We got along very well. I can't say that with every member of the committee, though. But we got along fine.

HARWOOD: James Beggs.

FUQUA: Jim was a great guy. Unfortunately, his career was tarnished by something he was later exonerated for. But he understood the political process. He was tough as nails and

made a great contribution to NASA.

HARWOOD: Bill [William R.] Graham being in place. I mean, some people have said, too, that changeover from, you know, Beggs, who was this fearless leader type, to Bill Graham that you had—it was almost like, you know, the planets collided at the time that *Challenger* happened to have all—everything in its worst possible scenario. I mean, did you agree with that? Or—?

FUQUA: Well, Bill Graham was certainly a different type person than Jim Beggs or a lot of the others. And he came out of the—out of the black world.

HARWOOD: Meaning the spy world or—?

FUQUA: The spy world. And, of course, he and Beggs did not get along at all! But he was President Reagan's choice for that job. And I got along with Graham very well. I think he was—he was a brilliant scientist. I think maybe a little bit out of his element in—as being a NASA Administrator.

HARWOOD: In what way? Management skills? Politics?

FUQUA: Well, I think management, and not understanding the political process as he had from his previous life. He later went on to be the President's Science Advisor. And I think in that he did a great job. And that was more in his—more in his element. I don't think he'd really managed big programs and a lot of people. And NASA sometimes gets a little—gets a little unwieldy to manage. And I think it was probably a little bit over his element in that as far as the management style.

HARWOOD: Bob [Robert R.] Gilruth.

FUQUA: Well, Bob Gilruth, you know, really brought the Johnson Space Center into fruition. One of the early pioneers at Langley, and was a wonderful guy. Tough but a great guy.

HARWOOD: What about Christopher [C.] Kraft?

FUQUA: Chris was another very interesting guy. I probably knew—well, I knew Chris better than I did Bob Gilruth. Chris was a tough—was a tough cookie. Smart and ran the Johnson Center and a lot of other places with a pretty iron hand. But Chris was always (I think) a—you never questioned where—you never questioned where he stood. He was a great advocate of the program and a good manager. And I think a good person at that time to run this Center.

HARWOOD: Some of your political colleagues, I noticed that in one of the listings of—the committee listings, someone who's on the committee with you who has now gone on to be (I don't want to say) a NASA opponent, but he certainly makes his feelings known is [Frank James] Sensenbrenner [Jr.]. And I noticed he was on a committee with you back then. Your thoughts on James Sensenbrenner.

FUQUA: Well, I think Jim is a strong supporter of the space program. I think he and Dan have probably had some disagreements. And they patched them up. Jim has been very concerned about the funding for the Space Station, as he should be. As chairman of the committee, I don't—I think he's looking at this as, "Let's don't get our necks so far out and get it chopped off if the Russians do not live up to their commitment." And he's got some

legitimate concerns there. And Dan is caught in the middle, trying to support the Administration and the Vice President, who has been somewhat the focal point for the Administration on this as well as Dan.

And with Jim a member of the—member of the Republican party, a different party. But Jim is a supporter of the space program. And...he sees his job as requiring him to do these things. And I think...he's raising some good questions.

HARWOOD: And do you think that that is your all's role? I mean, in terms of the politics of it? That you all walk that line? And you've mentioned things that you've brought up that you questioned and were maybe critical of that—was it possible to be a supporter and also be, you know, a “contrarian” sometimes?

FUQUA: Well, we all have our different ways of doing things. And Jim Sensenbrenner and I are—don't see things totally the same way. But recognizing that, I think his intentions are good. Now, I think he is, in his role as chairman of the committee—has legitimate concerns about getting ourselves involved in a program as deeply as we are with some partners that maybe are not carrying their full share of the load, or the one that they are expected to. And that's legitimate concern! And I don't fault him for that.

That's not trying to micromanage NASA. That's not trying to tell you how to build it. It's saying, “These are policy issues. And these are concerns that I have. And I have to answer to my colleagues, because they depend on me, as a committee chairman, to represent to them the facts as I understand them and how we are engaged in this. And are—will—are we wasting our taxpayers' money on some folly that the Russians may pull the plug on?” That's a legitimate concern! And I think Jim is exercising his responsibilities in raising some of those questions.

HARWOOD: In terms of institutions, the press, the media, and its role in the coverage of space and what you think that—

FUQUA: Well, I think the media, in many times, can be very fickle. I think generally they've been very supportive of the space program; but then, once you have a launch or two, then they never show up unless something bad is happening. And that—unfortunately bad news is—makes news and not good news.

And I cite the time when the Skylab was going to fall and all the major press, particularly the TV networks, wanted to know where I was going to be when it happened in case it hit Chicago or New York; and then stick a microphone in my face and say, you know, "Congressman, explain how this happened?" And I asked the question before then, I say, "Well, what happens if it lands in the middle of the ocean?" And they say, "Well, we don't care where you are. We won't be coming by for an interview." So, I said, "To heck with you!" (A little stronger than that.)

HARWOOD: So, that feeling that bad news is news and—

FUQUA: Yeah.

HARWOOD: —good news is not news.

FUQUA: But I think generally the press is—has been very supportive of the space program. And they still break in for launches and so forth.

HARWOOD: The—when you reflect back on your committee work, what did you see as some of the most fun of being on that committee? Some of the most fun projects that you think

you got to be involved with and oversee? Fun and fascinating, I guess.

FUQUA: Well, I think when programs are successful. Like when the first time the Shuttle came off the back of that 747 out at Edwards, it was a very big relief and it was fun that it happened.

When the first landing or first launch and landing of the Shuttle was a fascinating experience. We took a group down to Florida. We came by Houston...watched from Mission Control, and then went on out to Edwards and saw them come in. And it was fascinating that it, you know—it all worked well.

The same as when the lunar landing, and all the flights leading up to that, that were successful! And you see things that you work on for years, like a Hubble telescope, and what wonderful science—they've rewritten textbooks at what has happened from that. And to think back, "Gee, you know, I was part of that." I didn't design it. But I helped get the funding for it. And many other things.

The things that are happening now with—I'm sitting in the airport yesterday coming here, and I'm looking around. Probably a fourth of the people are talking on cell phones and a few years ago, that wasn't possible. So, you know, even in the telecommunications business this is—this has been fascinating! And I always like things looking to the future rather than to worry about sins we did in the past. And that was one of the things I enjoyed on the committee, the space versus, like, working on some of the nuclear programs where we were worrying about cleanup of some project that happened back in the '40s and '50s. I'd much rather look to the future than go back—than look back over my shoulder.

HARWOOD: What were some of the most challenging or frustrating parts of being on the committee?

FUQUA: Well, dealing with changing times and changing budgets and when programs—usually around Christmas and the holidays, when everybody’s quiet and they’re probably with their families, is when the White House would come out with some announcement they’re canceling a program or cutting it back or funding is not going to happen. I guess those were some of the more frustrating times. And then frustrating times when the Agency or NASA comes in and said, “Oops! We’ve got a major problem here.”

And I tried to have a relationship with them that, you know, “If you’ll let me in on the [problems] at the beginning, maybe we can work through these things. But don’t bring me surprises. I don’t like surprises. Let me know ahead of time, and maybe we can, you know, work together on this. It doesn’t mean that you’re going to get lynched because of some discrepancy.”

But cost overruns? They were always very troubling. They come in with a program that is utopia. And then you find out later that, “Oops, we’ve got some problems with it. It costed a lot more. We’ve got technical problems we didn’t realize we had.” “Why? Didn’t you check this all out?” I’ve been down that road. Been there, done that.

HARWOOD: Finally, any stories that stand out as, you know, particularly interesting or funny or just challenging? Or things that need to be remembered that maybe took place in some of those back rooms that we don’t know about, cause no one’s ever asked you about them? Any of those stories that stand out in your mind that are—?

FUQUA: Well, I talked about my good friend Larry Wynn, who was a Republican. Larry had been an athlete in high school and unfortunately had a mishap in a motorboat and lost his—one of his legs. And so, he had an artificial leg that came up to about halfway up his—up his leg. One day we were in Johnson Space Center up in the 9th floor, I think, in a big conference room with—and Chris Kraft was up giving us a briefing. And Larry was

listening to this briefing about something, and he had a little penknife he was cleaning his fingernails with. And something was said that caused him to make a comment; and he took this knife and jammed it in his leg!

Of course it was the wooden part, and it was standing up there just kind of vibrating in this leg. And everybody in the room looked down and said, "This must be the toughest SOB I've ever seen in my life!" or something. But it was, of course, in his wooden leg. And, of course, I think Chris and all the NASA brass that were there almost fainted when this happened; and then he pulled it back out of his leg and went on. But the expression on their faces when that happened! And Larry was a great jokester anyhow. But he really—that was a really "I gotcha!" We have laughed about that.

There's a lot of funny stories. Some of them probably the statute of limitations hasn't run out yet! But a lot of great stories that happened back during the course of hearings and meetings and so forth. But—and another one was with Wernher von Braun. We had flown down to New Orleans. We were going out to Michoud the next day, and we were staying in downtown New Orleans. And we had gotten in about 9 or 10 o'clock that night (I guess it was). We'd flown from Huntsville down. And so, von Braun and I were going out to get a drink; and he was telling me about a bar that had a swing in there of a lady that was swinging on the bar. It was down on Bourbon Street.

He had just been on the cover of *Time* magazine, like, 2 or 3 weeks before that. So, he was well known. (Nobody knew who I was!) But we must have gone in 20 bars and had a drink looking for this particular person. And finally after about the 10th one, I guess, we found the one that he was talking about and had a drink there and went back. And we got back in bed probably about 2 o'clock in the morning. But he was quite an interesting person. I enjoyed him. He was a great—he was a great person to testify, because he was such outgoing person, and such imagination.

I'm very fascinated in getting to know people like that. And many other of the

pioneers in the space business. It was—it's been a very interesting life.

HARWOOD: Any conversations that you can recall directly with President Nixon about the Shuttle Program? I mean, do you know what his feelings were about it? His personal feelings about the Shuttle? Was he a reluctant supporter?

FUQUA: I don't think I ever talked to him about it. Mr. Teague may have, because they came to Congress together. My relations with President Nixon were very, very few. He was not that kind of outgoing person and was very stiff. Other Presidents (Kennedy and Johnson) were very—Johnson was a very gregarious person. Vice President [Hubert H.] Humphrey [Jr.], when he was Vice President, had been a big supporter of the space program, was chairman of the Space Council! And President [James E.] Carter and President Reagan and President Bush, all of them had very warm relations with—about the space program and so forth.

I'd served in the House with George Bush, and so I knew him, and we had many occasions at the White House when the President would honor some of the astronauts. I remember that he honored the first crew of the Shuttle and had a...big lunch there at the White House out under a tent... It was a very nice thing. And then President Bush, when it was the—I guess the...20th anniversary (I guess) of the Apollo landing, he had a ceremony there at the White House, and I was invited to be there.

And so...I've had a lot of great times at the White House and with the Presidents and so forth. Not too much [with] President Kennedy. I'd met him several times before and right after I was elected. But President Johnson had a lot of conversations about the space program.

HARWOOD: Well, thank you very much for sharing your recollections and memories with us

today.

FUQUA: Thank you.

HARWOOD: Thank you. Okay!

[End of Interview]