

ORAL HISTORY TRANSCRIPT

DONALD T. GREGORY
INTERVIEWED BY CAROL BUTLER
HOUSTON, TEXAS – 20 OCTOBER 2000

BUTLER: Today is October 20, 2000. This oral history with Don Gregory is being conducted for the Johnson Space Center Oral History Project. Carol Butler is the interviewer, and is assisted by Kevin Rusnak.

Thank you for joining us today and taking time out of your vacation to do so.

GREGORY: Thank you. I think this is a great idea.

BUTLER: Thank you. To begin with, maybe you could just tell us about some of your background and how you became interested in aviation and aerospace.

GREGORY: Somehow or another, when I was going through the university, I went through mechanical engineering and I had an aero option. I was also going through ROTC [Reserve Officers Training Corps], Air Force ROTC. When I graduated, I had a little span of time between the time I graduated and the time I was going to report in to the Air Force, so I ended up going to NACA [National Advisory Committee for Aeronautics] up in Langley and went through my time in the Air Force. I was obviously a reserve officer with the ROTC, did not want to make the Air Force my career. Good people in the Air Force were always very strong pressuring everybody to go, make it a career, and I had a date of separation and I was just going to maintain my date of separation.

So I went through flying training. Kind of went through the cycle, went back up at Langley, and I was working in a wind tunnel there for just a very short period. I got assigned there, and then just about that time the space program was changing from NACA to NASA [National Aeronautics and Space Administration]. That sounded like something exciting to do, and so I went over and joined up with them.

I started off in an organization called Contracts, and I was kind of involved in the flight simulator for the Mercury. That was involving everything associated with the simulator, including tools or anything that we were going to have to need for when we brought the simulator over to Langley. I don't know what happened or why it happened, but Paul [E.] Purser came over and was looking for a live one, I guess. Somehow or other, I was asked if I wanted to go over and be on Bob [Robert R.] Gilruth's staff. I ended up being technical assistant to Bob Gilruth, and he was at that time the director of what they called the—not the manned space program, Project Mercury.

I spent on his staff at that time and did all the typical staff-type things you do. For example, we had one whole issue of the AIAA [American Institute of Aeronautics and Astronautics], which was the Astronautics Aeronautics Institute, and they put out a monthly or quarterly magazine, so I ended up being the individual that wrote Bob's introduction and coordinating with all the other authors such as Max [Maxime A.] Faget and, I think—I forget who else we had. Deke [Donald K. Slayton]. And getting that whole thing working with the editor out of New York on this thing, looking at the galleys, getting everybody to look at their galleys, make their corrections, get it all back. We were on a rather tight schedule at that time, because they have this time that they're going to publish the document or the magazine then. Of

course, like everybody, you say, "Oh, okay, if it's November, I can wait until October to finish my part of it." Well, it doesn't work that way. So, things like that.

Got on the ale and quail circuit, chicken and peas, which is going out and making presentations across the country on the space program. Got the opportunity to meet with all the dignitaries when they came. I was their tour guide.

In the meantime, being technical assistant, I would go out and coordinate with the various organizations for pulling together data for whatever Bob needed. So actually it was a great time in my career.

When we were moving to Houston, I was the director office representative out here. Bob and all the rest of the people were still up at Langley. That went on for, I don't know, two or three months, and we were going through a time when we were trying to expand and just hire people from all over the place. In between trying to be the representative for the director's office down here, we hit the circuit again, and this time I was, I guess you'd call it the headliner to go to the various cities where we were trying to interview people. We had a team of people that would interview, but I'd be the one to go hit the television stations and newspapers, that, "We're here," and the reason we're here and a little bit about the space program. We really hit a bunch of cities, just because we were looking for bodies and we were looking for bodies quick.

In the meantime, Bob and the rest of his staff, Paul Purser and Scottie [Iva L. Scott], who was his secretary, Phoncille De Vore, Paul's secretary, actually Paul Purser and I shared Phoncille, and we had another gentleman, Ray [Raymond L.] Zavasky, he was the executive assistant to Bob. They all eventually moved down here. I'm not sure what time frame it was, but it was probably about two, three, four months after—well, it was three or four months after we got here.

Then, of course, the whole time we're trying to build a facility down here at Clear Lake [Houston, Texas]. It was a period of time when we finally moved into the facilities down here. I was still with Bob for probably, oh, another—I'd estimate a half a year or so.

About that time, we, by the way, reorganized the whole center at that time because we were expanding. We went from various small offices to where we used to have an Astronaut Office, and we used to have the crew training part of it, and they were all separate. Of course, the aircraft was separate.

About that time, when we went to the larger organization, we made directorates. I was Deke Slayton's executive assistant, and I did that for probably the better part of over, oh, I guess ten, twelve years. The title was called executive officer.

Part of the organization was aircraft operations, headed by Joe [Joseph S.] Algranti and Warren [J.] North had the crew training part. What else did we have? Naturally the Astronaut Office. I forgot about those guys. The whole process at that time was to actually keep going, to go through the Apollo Program, but in the meantime we're flying Gemini.

We were getting simulators for Gemini. I guess that's how I got back into that world, because I was working originally in simulators when I was part of the Contracts group. We were buying simulators for Gemini. We were buying the Apollo simulators, command module and lunar module simulator.

Let me go regress here, because I remember one thing. By the way, I was very astounded how much data you found out about me. There was a point that I missed. From the time I was in Contracts, I went into Project Engineering. That's where I went over to Bob Gilruth's. I was in Project Engineering for a while and I was on the Mercury Atlas part of it. We were divided into two sections, Mercury Atlas and Mercury Redstone. I ended up going to

St. Louis [Missouri] for a couple of summers on Project Orbit, which was taking the Mercury capsule, as they called it in those days, putting it in a chamber, and having it go through a simulator of a flight. That was the whole idea of Project Orbit, finding out, trying to get all the bugs shook out of the vehicle itself. That was a fun time, being in St. Louis, and I think it was really just during a period of summer and going into the fall a little bit.

There were two separate times I was out there. I'm a little hazy as to just exactly what the time periods were. It was after I got back, that's when I went with Bob Gilruth as his technical assistant.

Then jumping ahead again, back where we were, we organized the Flight Crew Operations Directorate and as it turns out, it was Deke and I and our two secretaries. Deke was always off and out and about, going to various places like the contractor place at North American or [Marshall Space Flight Center] Huntsville [Alabama], down to the Cape [Canaveral, Florida], Washington [D.C.], and so a lot of times I was there by myself with the organization.

We once again were building our part of it. I think it was just a natural progression going on at that time, that we finally got the thing totally organized as it lasted for a long period of time.

Then the fire came and that kind of changed everything, just stopped, regrouped, went back and redid everything all over again. That was a pretty traumatic time. But I think we ended up, whether you could ever say something gave a good legacy, that did, because we ended up flying, I think, a much better spacecraft. We went through a lot of time looking at the fracture mechanics and non-flammable materials that we put into the spacecraft, getting out of the 100 percent oxygen environment, eventually what we have today.

It was very traumatic, because we were like still trying to meet a schedule and we had to stop and redo all this stuff. So that was a period of time that you wanted to keep moving fast, but you didn't dare. You had to just make sure what we were doing, we were going to do it good and make sure it's going to happen and that it's going to be beneficial, rather than just saying, "Oh, great. We'll just accomplish something else and let's go on." So, in retrospect, that period of time probably saved a lot of time downstream that you would have never anticipated that way.

Then we got to various points of getting ready for testing, and that's the one thing I think that NASA can really give a lot of experience to the outside world, to how much testing would go into something that would make it look like everything's great. Just things happened new, just seemed to happen with no real problems at all. The image of NASA was for a long while that way. "Gee whiz, look at that." But you don't realize how much time and blood and sweat go into all that.

Then we go through the testing. I remember one time it was almost like another Project Orbit situation, that we put the command module in the big old chamber, and this time we put a crew in there. By the way, Project Orbit, I think, also had a crew member in there, but that never happened, if I remember right. I'm not sure. Maybe Gus got in it one time. I really think that was more unmanned type of testing, Project Orbit. But we put the crew in. I remember Joe [Joseph P.] Kerwin was the commander, and after we went through a cycle of what we thought was enough testing and a cycle where we felt fairly confident with the command module, old Joe came out and said, "Yes, sir, Mr. Slayton, we're ready to go. The command module's ready to go." And after that period, things kept going relatively smoothly.

We had problems with the LM [Lunar Module]. It just wasn't coming along as fast as everybody had anticipated, so that's how we—George [M.] Low, I think, and Bob were very instrumental in coming up with the concept of the Apollo 8. If we had stayed on our regular process that we had started off with, I think we would have ended up really pushing the schedule out considerably, and I think Apollo 8 really helped make some very good confirmation as to how good the overall vehicle was, even though we didn't have the LM at that time.

BUTLER: What did you think of the decision when it was first announced?

GREGORY: Actually, there was a little bit of resistance to it. The resistance was from inside of our group. In fact, there was—by the way, can we stop for a second?

BUTLER: Sure. [Tape recorder turned off.]

GREGORY: There was a little bit of resistance inside our organization, and it was a time when Frank came over and sat down with Deke and they were—I guess the Apollo 8 crew were kind of nervous, so Deke, in typical Deke fashion, said, "Hey, Frank, that's your crew. That's your responsibility. If you guys don't want to fly, we'll get somebody that will." And they went out, and the rest of it's history, really.

BUTLER: I can certainly understand why they would be nervous. I mean, that was certainly a very bold decision.

GREGORY: It was a very bold decision. It was one of those things that it was not a step at that point, it was a leap. It was a big leap. Actually, we had some other conversations like that, not just Apollo 8, but going downstream.

Unfortunately, I guess you never had a chance to talk to Deke or Al.

BUTLER: We did get a chance to talk to Al Shepard, briefly.

GREGORY: Okay. Deke had put together a list of crew makeups, and the way the program ended up was not the way that the original crew makeup and the modified crew makeup was. There were other people that were scheduled to be on the first lunar landing rather than Neil and Buzz and Mike. Just because of the way the program involved, including what happened on 8, what happened on 9 and 10, it just so happens that the rotation got changed.

There were other times when we had people that came in and told Deke that they—and the reason I'm bringing this up is why they were the most experienced and natural people to be on the crew, and it even went beyond Apollo 11. These guys would come in and sit down and have these heart-to-heart talks. In fact, there are a couple of times I'm sitting in the office with Deke and whoever else, and I wish I wasn't here, because I'd rather be somewhere else at the moment, because some of these kind of got—Deke was a fabulous manager, in my viewpoint, but his manner was very calm and everything, but when he told you something, you knew that he meant it, and, by golly, there's no use sitting there and arguing with him. And some of these guys would come in and expound on how great they were and why they should do this and why

they should do that, and Deke would kind of just put them in their place. I think every member in that organization, the Astronaut Office, really respected Deke.

BUTLER: That's good.

GREGORY: And they respected his way of doing it. By the way, there was only one time—and Deke's recommendation for crew were always accepted, except for one time, and that was at the end of Apollo 17. Joe [H.] Engle was scheduled to be on that crew, and that was the end of the program, and we got a lot of pressure from up the street, called Washington, that, "By God, we went out and got these mission scientists," and we had a geologist on there, and so old Jack [Harrison H.] Schmitt got on, replaced Joe. When Apollo 17 took off, I was on the top of flight crew training building in Florida, with Joe at my side, and that was—

BUTLER: It must have been hard.

GREGORY: It was a bad day. It was his chance to go to the moon, and it just didn't work out.

So anyway, we had a lot of fun in the Flight Crew Operations. Also had a lot of tragedies. We lost a number of crew people, persons, along the way, through all kinds of different things. Car accidents. Ed [Edward G.] Givens [Jr.] died in a car accident early on in the program. Of course, Ted [Theodore C. Freeman] was the first to die when he hit a flock of geese out here in Ellington [Field, Houston, Texas]. C.C. [Clifton C.] Williams [Jr.], Charlie [Charles A. Bassett II] and Elliot [M. See, Jr.]. You look back, and, of course, hindsight is always 20/15, but you look back and something like Elliot See and Charlie Bassett, they were

given some bad, bad weather information, and that was tragic that it did happen that way. They should have not been flying in that weather. Tom [Thomas P. Stafford] and Gene [Eugene A. Cernan] were lucky to land. Unfortunately, they were trying to do a backside approach. They had a missed approach coming in to Lambert [Field, McDonnell Aircraft Corporation, St. Louis, Missouri], and they were doing a backside approach, and they ran into a building there. That was a tough one. Actually, they're all tough. But some of these guys, I was close to several of them, like Charlie Bassett and some of the others. It was very tough.

In the meantime, we're trying to build good old Flight Crew Operations and get everything put together, and the place got to a point where it was fairly large and having a tough time to have representatives and go to all the meetings and everything. So somewhere along the line, I think this was after Tom flew on Apollo 10, that we brought Thomas Patton Stafford over to the office with us and we made him Deke's deputy. Tom is a kick. Did you ever have a chance to talk to Tom?

BUTLER: We talked to him in the early days of the project, but I didn't get to be in on that.

GREGORY: You've got to talk to Tom. [Laughter]

BUTLER: We're hoping to again. We weren't able to get everything that we'd like to cover.

GREGORY: I would sit there and just shake my head sometimes, talking to Tom. He is one of these type of individuals that—well, for example, when he was on the ASTP [Apollo-Soyuz

Test Project], he would be able to get Cuban cigars, which we were not allowed to get in this country.

BUTLER: Right.

GREGORY: Tom would go over there. He really loved Cuban cigars. I was sitting in my office one day and he said, "Hey, Don, want a Cuban cigar?"

"Oh, yeah."

So he gave me six of these things. I lit this thing up, and, "oh, my God, I'm going to die." I never told him this, but I gave the rest of them away. [Laughter] To some ex-friends. They were tough.

Tom was the type of individual, I remember one time I just sat there and I said, "I just can't believe this is happening." He was up in Washington, he was in a meeting. He was supposed to go to another meeting about two doors down from where he was. He called back to Marianne [Martin], who was his secretary, to call back up to Washington to tell them he was going to be late for the other meeting. Like, "Tom, why don't you just open the damn door, walk down two doors and tell them, 'I'll be over here in a few minutes, guys.'" [Laughter] And just stories go on and on and on with Tom. He's a character.

By the way, did you ever find Tom [Thomas U.] McElmurry? Have you talked to Tom McElmurry?

BUTLER: We sure did, just a few weeks ago.

GREGORY: You did? I'm going to get the address from you.

BUTLER: Sure. He's still in the area.

GREGORY: Is he? Because last time I was down here, I couldn't find him.

BUTLER: Really? In fact, he's still doing flying lessons and everything.

GREGORY: Oh, God. He's one of my favorite people.

We got through the Apollo Program, and we had Skylab coming next. That was an interesting program, taking the benefits out of the Apollo Program. To the outside world, I guess, it wasn't all that exciting, but I think it was another data step for where we were going in this time period.

Skylab seemed to work very well. We really didn't have any humongous problems with that. Training on that was a bit different, because it was kind of a short program and it was kind of a compressed time frame to get ready for it, and we had to jump through some hoops to kind of make it all get together and figure out what the heck we're going to do. We had a volume now we could go do things in, rather than me sitting in a seat all the time. We would go through how the crew is going to be able to move about and exercise and all that.

[Astronaut] Bill [William E.] Thornton, old "Moose," he ended up being the individual that was coming up with the ideas of all the exercise equipment, and of course he would test all of it out, to keep the guys in shape and keeping all the juices flowing. I remember—this is why we called him Moose—I remember he would—like a—what you might call a—consider an

exercise bike, he would wear the thing out. My God! [Laughter] He was trying to get it to a type of environment where the crew would get some benefit out of it, yet it wouldn't be something like no resistance at all. So he'd wear the damn thing out testing it.

That was a good program. It was kind of, as I said, kind of anti-climatical in some respects.

Let me go back to the Apollo Program for a little bit, because we had a lot of different flights, and it kept getting cut back and getting cut back, and I guess the world was at that point thinking, "Oh, that's nice. We saw you bring back some rocks. Now what? We spent all this money."

So decisions, although Deke kept his crew assignments pretty well stable, decisions started showing up on the fact that people that were assigned to the follow-on missions beyond 17 were not going to have a flight. As you may expect, all these good people joined the program so that they could be flying, and then if they didn't get the first lunar landing, they were sure as hell wanting to have a flight so they could claim that they had that. There were some unfortunate times when people who thought that they were going to be part of a crew were not going to be part of a crew anymore. That was pretty traumatic.

And then when you're going into a different program, you're looking at maybe different combinations, so there were some changes there. Then we got beyond the Skylab Program and there came the ASTP, and once again two guys in my office, Tom and Deke, were going all the time and there's Don by himself again. They were off over in Russia or they were over here, but they were entertaining quite a bit. Deke's still trying to be the Director of Flight Crew Operations, but, you know, it's kind of an absentee landlord situation. He wasn't there.

BUTLER: It must have been neat, though, from your aspect, having worked with him for so long, to see him finally get his chance to fly.

GREGORY: Oh, God, I remember the day he got cleared. By the way, before all this happened, Deke was gone for long periods of time and for a long time there were probably three, four of us in the world who knew what the hell was going on there. I mean, he was gone and nobody knew where he went except for a few people. He was going, getting all kinds of testing so he could get cleared to fly. Above everything else, as I said, Deke was a great manager, and I really enjoyed that period in my life, but his whole desire was always to be able to fly, have a mission.

He got cleared. Of course, then the politics are okay now. "I'm cleared. When am I going to get my assignment?" [Laughter] So he ended up getting on ASTP.

The day that was announced, we knew that was coming, but the day that was announced, there was a little bit of a violation in the ninth floor office of Flight Crew Operations. We decided we were going to have a little liquid refreshment.

BUTLER: I can understand that completely. I think anybody could.

GREGORY: I forget what time of day it was, but right after Deke came back, he had this big smile after his press conference, "pop, pop." The Cola-Cola bottles really make a "pop" noise when they pop. [Laughter]

BUTLER: That's right. [Laughter]

GREGORY: It was Deke and Tom, and Deke's secretary, Sue [M.] Symms, Marianne Martin, and I think Goldie Marks [Goldie B. Newell?], my secretary, she was still there, too. We had a great time.

I've got to tell a funny story.

BUTLER: Absolutely.

GREGORY: Tom probably wouldn't tell this story, and unfortunately Deke is gone, and Vance [D. Brand], I don't know where he is at this point. Russian cosmonauts are coming over to the United States. Now, these guys have been over to Russia. Part of the formalities are we toast with vodka. So the cosmonauts are coming and this was their first time over here, and they were going to go through our facility, the simulators and all that. So Deke and Vance and Tom went up to the airport to meet them. For some dumb reason, their flight was delayed. They may have been flying United [Airlines], for all I know. [Laughter] Dear old United.

So they get in the car and they were staying over at—I don't know what it's called now, but it was the Kings Inn at that time or whatever. And by the time they get all their baggage and everything, I think there's two cars, and we had two cosmonauts and we had a third guy, who we called the Russian spy. He was their individual who went along with them.

Now, as the story goes, after they turned off NASA 1, there was a little like 7-11 convenience store, but it was after two o'clock [AM], and Tom and Deke and Vance decided, "Those guys always toast us when we got there with vodka. We're going to treat them to the American way of doing it." So they walked in this little convenience store to get a couple six

packs of beer. So Tom goes over to the cooler and gets the beer and brings it up to the counter, and the lady says, "You can't buy that. It's after two o'clock in the morning."

This is typical Stafford. "We need to buy this beer."

"I don't care. If it's after two o'clock in the morning, you can't have it. You can't buy that beer."

"See, you just don't understand, ma'am. I'm General Tom Stafford, United States astronaut, and these are cosmonauts."

Can you imagine this lady sitting there, thinking? And her response was, "I don't give a damn who the hell you are, I'm not selling you this beer."

Well, think about how old Tom felt. So they kind of got their tail between their legs and they went walking back out to the car, and they all got back in the cars, except for the Russian spy. He comes walking out with two grocery bags, with a loaf of bread on top of each one, and he had the beer. [Laughter]

BUTLER: Now, that's interesting.

GREGORY: I have no idea how that happened.

BUTLER: That's pretty good.

GREGORY: So anyhow, they go to the motel and they decide they're going to go toast, you know. They're drinking vodka. Of course, the cosmonauts had their briefcases. The briefcase opens up, there's all the vodka. So they drank beer and vodka.

BUTLER: Good combination.

GREGORY: There's Don in the office the next day, nobody's showing up. They're supposed to be over at the simulator area early morning. Nobody shows up. I'm getting calls. "Where's Deke? Where's Tom? Where's Vance?"

"I don't know."

Deke came in about two o'clock in the afternoon. I think he was still under the weather. Must have had a cold that night [Gregory smiles]. Tom didn't show up until, I don't know, God, five o'clock in the afternoon. I don't think I ever saw Vance. He may have gone over to the Astronaut Office. They had a great celebration.

BUTLER: That's good. Sounds like there was good bonding between the two crews.

GREGORY: Yes. That's why I say, Tom Stafford, he's kind of unreal. Things that happened to Tom Stafford you could write a book about sometimes. It'd be a hilarious book.

BUTLER: And he certainly seems to have established quite a connection with the Russians, as he's still involved doing consulting with Shuttle-Mir [International Space Station Phase 1 Program].

GREGORY: Yes. I saw Tom about a year and a half ago. He was up in Denver [Colorado]. We went down and chatted with him. He's on the board of directors with—I forget which company.

Part of the deal they cut with him is every so often he goes out and appears at “ABC” Jewelers, and their local paper says, "Apollo Astronaut Tom Stafford is going to be in our store," whatever. So whatever jewelry company it was, we went down and chatted with him, had breakfast with him the next day. He was tied up that evening. We had breakfast with him the next day. Had a good old time with Tom.

BUTLER: That's good.

GREGORY: Anyhow, we went through and we flew ASTP and life was beautiful there. Things really changed right after that, in my world. Bob Gilruth retired somewhere. I'm trying to put time frames here and they're fuzzy. But Bob retired. Chris [Christopher C.] Kraft [Jr.] took over. Chris had his own style, and he decided it was time to break up the Yankees. They used to talk about breaking up the New York Yankees because of how good they always were. It was time to break up the Yankees, so Flight Crew Operations kind of went away at that time. Some major reorganization changes took place, and part of Crew Operations went under Flight Operations, and I forget where the rest of it all went, but it all went in all different directions.

There was a period where reorganization was going across the board, but where I was sitting, it just completely decimated that organization. We ended up, that's when Kenny [Kenneth S.] Kleinknecht was heading up—I guess we were called Flight Operations. Chris tried to marry the simulators with the control center organizational-wise. We were separate organizations before that. Aircraft Operations still came under that. I moved over on Kenny Kleinknecht's staff for a while. I don't know how long I was there, maybe a year, maybe not even that long.

Then I went down to the Shuttle Program Office, and I walked into an office that I don't even know—they asked me politely would I like to go down there, one of those type of things. "I don't know. Do I?" And it was the logistics organization. I didn't even know what the hell logistics was. I had no idea. So I go down there and I meet all the crew that were a part of the program office that were logistics. There's Don, dumb as hell, and these guys are trying to tell me what all this is. [Laughter] I'm trying to figure out what it is and learn as I'm going along.

Who's the guy who was up in [NASA] Headquarters? Mike. He was the Assistant Administrator for us, Mike something or other. "But we have a new kid on the block here. Let's find out who he is and what he's made of." So within a month after I was down there, this logistics organization, Washington wanted Don to go up to Washington to give a full presentation.

Ours was to pull together the whole package of the tank and the engines and SRBs [Solid Rocket Boosters] and, of course, the Orbiter, which was part of JSC [Johnson Space Center], but that was the biggest headache of all of them, and logistics is to go ahead and integrate logistics, go ahead and do the engineering to make sure that you could maintain the vehicles, the supply support and the transportation and all that other stuff that goes along with it. I'm still not even sure what the heck all this is, and there's Don scheduled to go up to Washington and brief Mike on the condition of the logistics organization, how well we're doing to integrate logistics, how well we're doing with all the other centers and the other programs.

So I go down and talk to Bob [Robert F.] Thompson. I said, "You know, what exactly are we going to do here?"

So Bob called Mike up. "What the hell do you guys want?"

"We want Don Gregory to come up here and tell us all about how great logistics is doing and the general program, how they're interfacing with the other projects."

Bob's sitting there, speaker phone, and he said, "Tell you what. Rather than sending Don up there, we'll do it by telecon. I'll send you a picture of Don so you can see what he looks like." [Laughter]

So we frantically put together the dog and pony [show] for that, and we did it by telecon. We were doing our part from Building 1. We had the Orbiter guys come up and do their part, as I say, "put together their lies." We had Huntsville tied in and we had Florida tied in, and we had the contractors on the line, so that was one of those dog and ponies that we filled the square. I'm not sure whether we made everybody happy or unhappy or whatever.

That worked so well, I thought, gee whiz, that's one way, rather than us always going across the countryside to see everybody. Turned out that I was still traveling about two, three weeks a month, even though some of them were one-day stands, as I call them, go out one day, come back the next day. We would go ahead and tie everybody in on a telecon, and that seemed to work out pretty well.

About that time in my life I started thinking about all this, and as you can see, I started off, I was just a little kid with the Mercury Program and I grew up with the damn thing throughout the whole space program. I watched it go from going back to Mercury. You talk about a highly motivated organization, there was nobody—there was nobody in that organization that I knew of that worried about time on the clock. We all seemed to have a job to do, we're all going to go make it happen, and there's people that worked 100 hours a week and do that consistently. You put in that kind of time and after a very short couple of weeks you're

ineffective again. However, the adrenaline was flowing and there was a lot of people that were doing that.

In fact, I remember one of the auditors came in one time. We had this one secretary—this is still back at Langley—we had this one secretary, she was a hoot. She didn't care what she said or how she said it. The auditor came in one time and they're doing time-card audits. It just so happened she was sitting at her desk, and I forget who it was, I think it was Rod [Rodney C.] Rose who came in about ten o'clock in the morning, and he said, "What's that?"

"Oh, that's Rod Rose."

"Let me see his card."

So she shows him his card, you know. We were putting in all these weird hours. We put in whatever time we started, 7:30, 8:00, and we'd leave at 4:00. There's no such thing as overtime. He said, "That man just came in now and he's showing that he's here every day."

And she just lit into this guy. It was kind of an open area and the two secretaries were right up in front there. It was interesting. I mean, that guy, I don't think he ever came back.

She kind of told him very politely, and I think she was in the Navy. Every so often you could hear just a nice common word told very politely that these people back here are working 80, 90, 100 hours a week and there's no damn—she's not going to fault anybody for coming in late one morning or whatever. Oh, she tore that guy apart.

Anyhow, I started saying that I started from a very highly motivated organization and it kind of grew over the years. I'll bite my tongue, but it got to be a big old government bureaucracy, if you can use that terminology. Politics were, in my viewpoint, now, other people may disagree with that, but politics, I think, played a very important part in how we were doing

business. "If it's not invented on my shift, it's no good" type of thing. I got to a point of saying, "Okay, I think I've had enough of this fun."

Jack [R.] Lister at the time was personnel director, and I went down. Jack and I go back a ways. I go down, said, "Jack, I think it's time that I have a good opportunity to leave." Unfortunately, there were no RIFs [Reduction In Force]planned, nothing that would make it convenient. There's only one integrated logistics guy. They're part of my organization, but they couldn't really do away with that office title. And I said, "I'd like to be able to get out of here as soon as I can, go off and do something different."

This probably started back around the first part of the year, and we were working very diligently to figure out how we were going to do that. Somewhere in the summertime, I was getting a little bit antsy at the time, somewhere in the summertime I called, "Where is my paperwork?" and my contact up in NASA Headquarters, "Oh, it's over in OMB [Office of Management and Budget], has to be approved by OMB." So I called whoever had it in OMB, and whoever, "Joe Schmirdly," whatever his name was, was on vacation and he wasn't coming back for two weeks at that time. He'd already been gone for a week or two. It was sitting on his desk, and here's Don wanting to get the hell out of here.

So I'll bite my tongue. I probably threatened a few people. [Laughter] So somebody went and got the paperwork from "Joe Schmirdly's" desk, whoever the guy was, that's not his name, and got it through OMB, got it back. This was probably July, August at this time. I remember I left on October 3rd. My wife was working downtown. She was up to here with her job and working for Republic Bank, I guess it was, and she was wanting to quit. I said, "I'll tell you what. We'll both quit at the same time." And until the time at 4:00 on that October 3rd day, I walked to the guard shack to process out, I wasn't sure I was going to make it. I really did not

think that I was going to get out. I was going through all the signoffs and all the rest of that good stuff, but it was one of those things that you really didn't feel comfortable about. I just thought it was still going to fall apart. It was that sensitive at that point. But I got out. That's when I left.

BUTLER: What did you go on to at that point?

GREGORY: Well, that was another kick. Right about the same time, and people all knew, "Don wants to get out," about the same time, good old NASA Headquarters decides, "Well, we're going to break up the Yankees again, but this time we're going to go and have a single contractor in Florida, Shuttle processing contractor."

So they went ahead and they had a bidders conference and they filled up the auditorium here, just all kinds of contractors. I think they had 50 or 80 different companies that were up here to find out what this is all about. As the RFP [Request For Proposal] gets ready and gets released and all that, the numbers keep going down. Eventually it got to be two bidders, and the two bidders were Lockheed [Aircraft Corporation] and Rockwell [International Corporation].

The RFP asked to have a single Shuttle processing contractor. Rockwell's proposal came back in and says, "More of the same. We've been giving you this fine operation." And Lockheed answered the proposal, "We will be the Shuttle processing contract." So Lockheed won it.

Now, as I mentioned a little bit earlier, we went from a highly motivated organization to the government type of organization, and kind of got to the point of—well, I always thought NASA got to be very arrogant. Lockheed was not one of the NASA contractors, and they won

this thing. And they were just like, "What do we do now?" They had an organization, they had the key management and all that kind of good stuff. But in anticipation of winning this thing, not being one of the NASA contractors, they really didn't have a score card as to who was doing what and how you do all this.

Some of the people that were in key management with Lockheed, I think kind of recognized that they were going to be in deep yogurt, and they were looking for some people that possibly knew what the system was. Walt [Walter J.] Kapryan told a guy in Lockheed, one of the bidders, he said, "Don Gregory is going to get out, and you might want to talk to him."

So this guy calls me up. "We're anticipating winning this contract. Would you consider coming down and working for us?"

And when I decided I was going to get out of NASA, my first thought was to go to Colorado Springs [Colorado]. I had never been up there, didn't have any idea, except I wanted to go somewhere where you saw mountains or some terrain, you had four seasons, you didn't have a whole lot of bugs. I had lived here for a long time and I was looking for a different environment, but I had no other reason to go to Colorado Springs other than a total change of what it looked like outside.

So these guys finally talked to me and convinced me I should go down to Florida to work for them, and I did. I went down to work for good old Lockheed. That was probably the worst job I ever had in my life. I think part of my job was to provide some guidance as to how you work with NASA guys. I remember at one meeting we were sitting in and the vice president of operations, I can't remember his name, even though we almost lived within about four or five houses, was in the meeting with Bob Sieck [launch director at Kennedy Space Center] and a bunch of other people, and we were going to go do something, have a meeting.

This guy said to Bob, "Have your secretary contact my secretary and arrange to get on my schedule."

I went, "Oh, my God. You don't do that. You ask Bob Sieck when he wants you to show up and you'd better show up at that time." God, where did this attitude of "Have your secretary get my secretary to call"? I told him after.

Unfortunately, after we were there six months, Lockheed was just going down the tubes. They weren't impressing NASA at all. One Friday morning three people out of Calabasas [California], Corporate Headquarters at Lockheed came down to Florida, one went over to Al Schroeder, who was the president, one went over to John Denson's house. They went to their houses first thing in the morning, knocked on the door. The vice president of operations, his name was Bob also, went to his door. And each one of them took these gentlemen out to breakfast and fired them.

You talk about shaking up the world. It was not just aerospace; that was quite a ripple in the old pond when the president—we were integrating 6,000 people into the operation at that time, the president, executive vice president, and the third man in the organization, vice president of operations, all got fired and were told never to go back out to the site, Kennedy [Space Center]. Talk about trauma, once again.

John Denson, Al Schroeder, all three of them were nice guys. I really liked them. Bob Peterson was the third guy. It was a traumatic situation, and that really affected the whole organization. Then they brought in these other three individuals, Doug Sargent and two other guys. We had some Lockheed people we had hired, and they kept saying, "This is not the real Lockheed, not the real Lockheed guys." They were something else. I keep saying, "Well, if they're not the real Lockheed, where did they get these goons?" Because they came in and they

really kind of were rough-riders, and marching orders were completely changed at that time. I mean, their way of managing was by intimidation, yelling, screaming. It wasn't very pleasant.

So I stayed down there—I quit three times. The third time I really left. The first time I was marched down to Doug Sargent's office, who was the president, and, "Oh, Don, what can we do to make things change here? We need you more than you need us." I told them why I wanted to quit. "Oh, we'll change. We're going to make it. We've just got to get over this initial hump here and get things organized," blah, blah, blah. Yeah, right. Never changed, not till the day I left, and that was about a year or two later.

They were going to have a Payload Integration Office contract, and Ed Andrews, who was part of our organization, got split off to put together that proposal. He said would I like to go on that contract. I said, "Oh, yeah." That's the second time I quit. But unfortunately, Lockheed didn't win. But Grumman [Aerospace Corporation] was the competitor, and they won. Fred [W.] Haise was going to head up the new organization of headquarters. Grumman won, and I was also on their team at the same position. Unfortunately, NASA didn't fund the darn thing right off the bat, and after I left Lockheed, they finally funded it. I don't know what the status is today.

When I was leaving—and I hate going-away parties, but they decided they were going to have a going-away dinner for me. So I showed up. The Grumman guy got up there and said, "By the way, you guys don't know this, ha ha ha ha ha, but Don Gregory was on the same level in our organization with the payload integration contract." I thought, "Ah, jeez, that's great. Good thing I'm leaving." [Laughter]

At the time we were in the process—Linda [Gregory's wife] was already up in Denver and that's how we got to Denver. So, I guess that pretty well takes me through Don's part of NASA.

BUTLER: That's an excellent overview. There's a couple of things I'd like to go back to and talk about in a little more detail. Going back to, actually, almost the beginning, with the changeover from the NACA to NASA, and you mentioned that getting into the space program seemed like something interesting to do, had you followed much of what had gone on beforehand, such as with Sputnik and the buildup to the space program, or did you just hear about it as they were making the transition over to NASA?

GREGORY: Well, actually, all that seemed to happen right about the same time. Sputnik was—yes, I was aware of it. Even in the Air Force, in fact, ROTC, I think we were talking about all that stuff happening up in Cape Canaveral and nobody knows what's going on there and all that kind of good stuff. But, yes, I was aware of that.

I'm not sure—sometimes I look back and I think, gee whiz, I'm not sure how I would ever have planned to end up where I did, how it all worked out. But as I said, I had date of separation with the Air Force, and I was going to get out no matter what, and it was just about that same time frame that NACA turned to NASA. The fact I had already been there at NACA, I was aware of what was going on at that time.

BUTLER: When you came into the Space Task Group, you mentioned that originally you were in the Contracts section and that you were working on a lot with the Mercury, some of the trainers and simulators. Is that what you were involved in?

GREGORY: Yes, they were trainers at that time. A trainer—a subtle difference. A trainer is not really integrated with anything, even though it was a full-up trainer, but we even had some mockup dummies inside the Mercury trainer. Then a simulator is one that you can actually integrate in with control center and ground operations, that type of thing. A trainer is, you have probably a guy sitting outside with a head phone and he's monitoring whatever readout you have in the inside.

But simulators, by the way, going ahead a little bit again, the biggest compliment a crew could give the ground-pounders here was, "Hey, that flight was just like the simulator." Simulators, basically people think you get in there and you fly a mission. Well, you really hardly ever flew a mission in the simulator. Your real benefit out of the simulator is doing the off-nominal-type things, failures, making things strange to see how the crew reacts, how they recover.

We had it set up that with the simulator the instructor on the outside could fault the simulator. When we had integration with the control center, the control center guys may not have known that. The crew looks, "Hey, there's a problem." Or control center guys could fault something that would affect the simulator to see how quickly the crew would react and what the corrective action was.

So when you're talking about a simulator versus a trainer, that's basically the big difference. As I said, it was a lot of off-nominal-type training, putting in faults and putting in conditions where the crew had to react and react fast.

Probably the most famous of all the images of the simulator happened with Apollo 13. You talk about a critical situation. But to be able to figure out what the crew needed to do and how to do it, we had the simulator. T.K. [Thomas K. "Ken"] Mattingly [II] kind of headed up the operation on that side. John [W.] Young and T.K., if I remember right. We were figuring out the stuff that they had. Of course, T.K. was very familiar, and John was the backup commander. How to build the various devices like the filters and stuff like that, that they had on the spacecraft, what was available for them to be able to do that type thing.

Well, the world was watching the control center and Heir [Eugene F.] Kranz was doing his thing over there. The crew over at the simulator were the ones that were sitting up nights and sweating bullets trying to come up with some fixes.

BUTLER: Did you work primarily with the group in the simulator during 13?

GREGORY: Yes.

BUTLER: Do you recall your thoughts when you first heard about the accident and what was going on there and the severity of it?

GREGORY: Well, I really didn't, I guess, at first didn't comprehend the severity of it. I don't know how many people really did. "Houston, we've got a problem." Hell, we had lots of

problems over a period of time. Nobody really knew how good, bad, or indifferent the problem was until they separated and hooked up with the LM and had a chance to take a look at the darn thing. My God. But even—I forget. I think that happened sometime during the night. I forget what time it was.

BUTLER: It was right before the astronauts were getting ready to go to bed. I don't remember exactly.

GREGORY: Usually when you have something like that happen, the phone rings. "We've got to figure out what we're going to do here." But sometimes you don't even know what you're going to do because you don't know what it is, how bad it is or how good it is, what the real situation is. So that was one of those things that everybody kind of got on station pretty much about the same time in figuring out, okay, how good or bad is it? Do we have a big problem or do we have a small problem? Do we have a non-problem? Of course, when you figure out that it was quite a boom and that's unexpected, it's not going to be a small problem.

BUTLER: Had you done anything before the mission with the simulators that would even come close to approaching—

GREGORY: No, and that's the idea of the simulator, is to try to figure out every combination, which way, how you could do things, what's going to fail, what's going to happen, blah, blah, blah, blah. As I mentioned, when we shut down after 012 [fire] and went back and rebuilt everything, we went through fracture mechanics and all the rest of the stuff, and that stuff was

part of it. You don't expect that to happen. Everything doesn't work out the way you expect it, though.

By the way, that made me think of another one, talking about Deke, his way of operating. As you may expect, some of these guys were individuals.

BUTLER: Yes. [Laughter]

GREGORY: And sometimes they gave Deke a hard time. They played on his friendship, their relationships. They probably tried to take advantage of him if they could. The one time that the control center went dead with the spacecraft was when we were doing Apollo 7 or whatever it was with Wally [Walter M. Schirra, Jr.] and Walt [R. Walter Cunningham] and Donn [F. Eisele]. Wally was being difficult, and that was the only time that all plugs were pulled except Deke's. After that, Wally decided he wasn't going to be giving anybody a hard time anymore. [Laughter] Deke had a unique way of talking to people, that he was very convincing, especially when he was really wanting to mean that he was very convincing. He wouldn't sit there and yell and scream at you, but I mean, he told Wally that "This is enough of that crap," putting it nicely. "If you think you ever want to see the inside of a spacecraft again." And after that, everything went well with the rest of the mission. The guys were all mumbling about they were not feeling good and that stuff. It was another one of those first out of the box, where we were orbiting the command module and there was a bit of nervousness there.

BUTLER: Sure. Especially having come from recovering from the fire and all.

GREGORY: Yes. But Deke could put them in their place. He was probably the best choice of making—if you had a Director of Flight Crew Operations, Deke was the best choice by far. Whether that was by accident or whatever, when Gilruth decided to name him the Director of Flight Crew Operations, it was a fantastically good choice. None of the other original seven could have done it. Of course, John [H. Glenn, Jr.] was gone, Scotty [M. Scott Carpenter] was gone, Gordo [L. Gordon Cooper] was gone, so you had Wally and Alan [B. Shepard, Jr.].

BUTLER: Certainly does seem to have been the right man for the job.

GREGORY: Yes. If I had to smile and say the two best guys to ever work for, were Bob Gilruth and Deke. Both of them were real gentlemen. I have a lot of respect for both of them.

BUTLER: We've certainly heard a lot of good things about them both through this project.

GREGORY: I would imagine, because I think that feeling is shared by a lot of people.

BUTLER: And apparently for very good reason.

GREGORY: Oh, yes.

BUTLER: They had certainly a very large impact on the successes of the space program.

GREGORY: That they did. I feel like, once again, the both of them were very well placed. There were very, very few people that—I don't remember ever coming across anybody that had a bad thing to say about Bob Gilruth. I don't think you could say that about Chris Kraft.

BUTLER: Probably not. That's certainly another unique individual in his own way.

GREGORY: Yes, and I'm not sure that people would even compare George Washington Sherman Abbey with any of those guys.

BUTLER: [Laughter] Right. Going back again to close to the beginning, in fact when you were working more closely with Bob Gilruth, or actually just before that when you were in the Project Engineering Branch, you said you worked in the Mercury Atlas area and some of your duties there involved analysis on the missions and writing project reports, is that correct?

GREGORY: Yes.

BUTLER: What were some of the—I guess some of the challenges in that position? Here you were dealing with the Atlas, which was a new vehicle and had some of its own problems and getting ready with these unmanned flights to fly John Glenn on it and to put people in orbit. Can you tell us a little bit about that time frame?

GREGORY: Yes, okay. Basically, as I said, we were divided into two sections in this Project Engineering area. Basically we had everybody be the overall expert of the Mercury capsule, but

then each one of us had a sub-responsibility for systems. If I remember right, mine was the environmental control system, which provides all the good air for oxygen for the spacecraft and all the pressures inside, that type of thing. What we were trying to do is work closely with McDonnell at that time and monitor how each one of their systems are coming along to make the overall capsule work together. I guess that's how I ended up on Project Orbit, because I was the environmental puke, and that kind of tied in with putting the thing in the chamber there, I guess.

But we also had to have the integration with the Mercury Atlas. Back in those days, we weren't sure we wanted to do anything that dumb, if I could be so gross. But, you know, we put a belly band around the Atlas there so it wouldn't come apart on us. Everything you did, we were trying to maintain weight control and system compatibility and make sure that it was all going to work together. It was a challenge of just looking at this type of a thing and never having to deal in that environment, that we, I guess, felt the responsibility and motivation to make sure that our part of it, whether it was guidance or electrical, whatever, was not going to be the reason to hold the thing up.

Going back in that time frame, I remember when they put Gagarin up, and, of course, that was a big crisis. Of course, whenever you have something like that, then you go interview all the experts. Like some dumb congressman, I remember this as if it happened this morning. They had a microphone in front of this stupid congressman's face and, "What's happening with our program?" "Well, I don't know, but these guys working in that program have got to start coming to work in the morning and spending some time making this thing happen." We were working 80, 90 hours a week. I'm sitting there, I heard that, and I said—oh well, you don't want to know what I said.

BUTLER: I can imagine.

GREGORY: But that was one stupid individual that didn't know what the hell. He was pulling it right out of his left ear. I'm making a statement, but yeah, "Congressman Schmotz."

BUTLER: Well, you did get it all together.

GREGORY: We got it all together. Every time we had a failure, you always sit there and say, "Oh, jeez." We had Little Joe at Wallops [Island, Virginia] and we had a few failures there. It was kind of very depressing, working as much as we were and trying to get the thing to happen, and you see something happening where we had a failure, the time like the tower went off the Mercury Redstone. You know, "God, guys, how many different back-door situations are going to happen to us before we can ever get there?" It's frustrating, because we'd try to get it going and just time seemed to be the enemy.

BUTLER: Did you have those points when you were wondering whether it was going to all come together or whether you could—

GREGORY: Oh, definitely. It was kind of like trying to get over to someplace and you just can't quite get there, you know. It was very, very frustrating a lot of times.

BUTLER: Must have been rewarding when it did all work.

GREGORY: Yes. This is Don Gregory, but I maintain the guy that took the biggest risk of all was Al Shepard. Even though that was not an orbital flight, which we had to get an orbital flight and all that, but Al was cool about the whole thing. The number of times he climbed into that damn thing and we sat there and scrubbed and went back and did it again, scrubbed. "Is it ever going to happen?"

Let me bring up another thing, anecdote. This was when Mr. [President John F.] Kennedy came down here. Jim [James E.] Webb was the Administrator of NASA, which was a political appointment. Jim Webb was a friend of Senator [Robert S.] Kerr's and [Vice President] Lyndon [B. Johnson] and all those good people, and Lyndon was—I think he was at that time headed up the Space Committee. So once again things were happening without asking always the right people. I think we were at Rice University the day that Kennedy was up there and saying, "We're going to go to the Moon and we're going to do it in this decade, send a man to the Moon and return him."

And Bob Gilruth was sitting there while Kennedy's up there, and he's like—and this was typical Bob Gilruth. When there were things he didn't want to hear or he was hoping would go away, he'd put his head down like this. After all that happened, some time later we were talking, and he just shook his head and said, "I just don't know how we're ever going to do it. I just didn't think we were ever going to be able to do that."

BUTLER: Well, that certainly was an enormous challenge.

GREGORY: Oh, yes. Poor old Bob. If he had any hair left at that time, it would have turned gray, but it was kind of thin. [Laughter]

BUTLER: That's right. And here you'd only just barely put Al Shepard up for just a few minutes and hadn't done that orbital flight yet.

GREGORY: We were still playing the game of how the hell we were going to do all this program. It wasn't clear at that point by any means.

BUTLER: There certainly was over the years that followed a lot of changes in the technology to make it all happen, and here you talked about originally it was trainers for Mercury that get built into these simulators that were so detailed, that could work to save the crew for Apollo 13. A lot of change along the way.

GREGORY: Well, actually, that happens to be the visible one, but there's been a lot of—when Pete Conrad was Apollo 12, just after liftoff they got hit by lightning and everything went dead. Like, "Oh, boy." We kept going and we went through the procedures of getting everything back up. It came back up. We made the mission. But if we had that back in the early days, there was no doubt what the hell we were going to do. "Let's punch off and get the hell out of there." And then you gain experience as you go along, but even the simulator played a great role in that. "Okay, how do you get this thing back up?" Because you don't just start punching buttons. You have to go through sequences to get the system back running. That's part of the training that they had.

BUTLER: Certainly a lot of extensive training.

GREGORY: Yes, and, you know, we had problems throughout a lot of the different missions. Just the fact that the crew recognized something or it happened, we could give them the feedback as to what we need to do, no problem. Like the landing on the Moon, all of a sudden it got overloaded. The computer got overloaded. If old Steve [Stephen G. Bales] didn't understand what the hell was going on, [he said], "That's okay. Keep going." We would have punched off. We would not have made that mission. So that's the value of all of the training not only for the crew and our guys, but the ops guys.

BUTLER: Absolutely. Well, if we could take a brief break here and change out our tape.

GREGORY: Okay.

BUTLER: Well, we were just talking about some of the early Mercury flights and getting things on track, Kennedy's challenge for Apollo, and bringing all that on line, and the development of the technology along to make it all happen. Originally when the program was set up, it was Mercury and then there was the Apollo. But shortly thereafter came plans for Gemini as a transitional program to develop a lot of the skills and technology. What was your involvement in Gemini? By this point you began working with Deke Slayton through the Flight Crew Operations. Is that correct?

GREGORY: Yes.

BUTLER: As the program was going along with the various missions, a lot of hiring was going on for the astronauts at that time and a lot of training. What were some of your daily—was there a typical day during this time?

GREGORY: No. No. Like you say, in hiring of astronauts, we went through getting a few different cycles of bringing on more. Part of it was trying to anticipate what is the real need for the number of missions we have. I guess it's one of those things you really want to think about or not. Also attrition, attrition from several different ways. The ultimate attrition, dying. But we had a certain amount of attrition built in, so how we were figuring out how many crew members we needed, what the criteria were. Every time that you went through another selection, criteria changed. It got more loose.

We started off with experimental test pilots, and these are a type of people all to themselves. When you're thinking about the type of flying they do, you surely can't fault them for the way that they think about the world, if I could use that kind of an expression. Then we started getting less time. We went from being experimental test pilots to guys that were flying high performance, what we call burner time, you know, how much after burner time they have versus their total flight time, versus their education. Education started coming up. Flying, piloting time started going down. We decided we're going to have to get some scientist astronauts, so that was a different group.

Typical day of Don Gregory, somehow or another I got approval for old Moose to be able to wear glasses. We decided, "Okay, if you're going to be an astronaut, you have to know

how to fly an airplane." So we sent him out to Williams Air Force Base in Chandler, Arizona, to go through flying training there, because at that time T-38s were also the Air Force's flying training vehicle. But Bill couldn't pass the eye exam. Here's a medical doctor, a very highly qualified individual, but he couldn't pass the medical exam. So I got him approved, waived, so he can wear glasses. That's probably the first time that anybody that went through Air Force flight training wore glasses.

So different selections that we went through. As I said, the requirements of flying got lesser and the education got more and more. There was always, for want of a better word, the in-fighting of keeping it more towards the society of experimental test pilot type of people versus those other guys outside in the world. It was sometimes very tough to go through the criteria of this and get through the whole cycle. Headquarters would come down with their ideas, how to run the ship, and immediately that was the wrong thing to do. [Laughter] So there was resistance there, and that happened.

I probably was more involved during that time frame in that part of the world, the astronaut selection and buying the T-38s we were going to be flying and finishing out of—we had [F-]106s here, I guess, the crew. Then I was at that time involved in Warren North's operation, even though Warren was part of ours. I was still involved in that, coming up with the crew training. Warren had two parts of his organization, the simulator people and the procedures people. The procedures people were the ones that wrote all the flight plans and everything like that. But I think I was more involved with selection and buying airplanes and procedures than I was with the simulators at that time. That's still part of our organization, and, yeah, we were involved, but I think the emphasis was more towards the other way at that time.

Then as life had it, after the Apollo fire, we kind of pushed more toward the simulators, because we were very concerned about we had to have a very topnotch simulator to be able to fly this program. I probably ended up more involved in that. After that, airplanes were here. We used to kid we had the third largest Air Force. But we were still getting airplanes for the different reasons—the earth resources activity, the Vomit Comet [KC-135], all those airplanes. We kept getting the WB-57s doing earth resources, that type of thing. But I think my focus kind of ended up more towards simulators and crew training procedures as we went into the Apollo Program.

BUTLER: As the—looking at some of that transition time during Gemini, one of the—I guess you would call it a simulator that kind of came on board was the underwater training that originally in the Gemini missions they hadn't done much of that, but experienced a lot of problems on the EVAs and transitioned into using that toward the end of the program. Were you involved in that at all?

GREGORY: Yes. In fact, as it turned out, the WIF, as it's called, Water Integration Facility, whatever the heck—we were great with acronyms—that was [originally] going to be a centrifuge. Once again, going back to the society of experimental test pilot mind-set, the medics decided we needed a centrifuge. We decided we didn't want the centrifuge. There's no damn reason for a centrifuge. In fact, the early guys went through testing that was unbelievable, that was ridiculous, and maybe it was best that they did, because it was shown how ridiculous some of that was, get the medics off of our back and made it easier for the later guys. But we built the

facility for a centrifuge and all of a sudden we had kind of an empty building there, and that turned out to be our Water Immersion Facility.

That type of training had been going on in the Air Force and Navy for years in some respects. Dunk the guy in the water and see how he can get the hell out of there. Also it turned out that, gee whiz, we can use this for weightless type of training. Of course, you have to be in a suit to do it. You're not going to be able to breathe under water like you would. We went through a fairly long period of time of trying to figure out the balance of all that so you could actually do task, and we weren't sure what the heck we were going to do as far as task. We got out of the—we had the big doors so you could get out of the spacecraft. Then we did other things, like going in the back of the vehicle. I guess it was Dick [Richard F.] Gordon, near the end of the program, going in the back of the vehicle there and trying on a manned maneuvering unit, which at that time was nothing like we have now. Those type of things.

To do all that, you had no idea how, once again, what the heck we were looking at and how we were going to be able to do this. Of course you didn't want the guy floating off. So we had to figure out, okay, how do they get back there? You don't open the door and walk out the back, the back door. So we had to figure out the handholds and how they in the suit can work with that type of thing. So that turned out to be relatively valuable.

So, in retrospect, the fact we ended up with a building that we really didn't want, it turned out to be beneficial.

BUTLER: During the missions themselves, especially focusing on Gemini right now, what were your duties and responsibilities while the mission was actually up and running? Were you available in the control center or just available in your office while working on other things?

GREGORY: Yes. [Laughter]

BUTLER: Some of everything. [Laughter]

GREGORY: Yes. Once again, that was probably a time frame where we were flying, we were in a brand-new program. I guess Gemini was valuable from the viewpoint that it got us out of a shoe box situation where the guys were actually put in there with a shoe horn, to being able to get out of the spacecraft and start doing something different.

So Deke was spending a lot of time with the crew themselves. Once again, it was a time when we were really feeling our way along. Deke's main thrust at that time was, I think, being more associated with the crew and the crew training and how well they're doing, and what we need to do to make it easier for them. So I ended up being Don in the office by himself a lot of times. The crew would go off wherever, like to St. Louis or wherever, and Deke would always be with them. He didn't do that after Apollo. We backed off. But, yes, I was over at the control center. I was in the office. Yes.

BUTLER: Wherever you were needed.

GREGORY: Yes.

BUTLER: With—I'm sorry, I just lost my train [of thought] there. Looking at Deke Slayton, you said he was working primarily with the crews during Gemini and you had talked here about

involvement with the hiring of the new astronaut corps. What was the general, I guess, relationship between everyone in the office as new people would come in, as crews were in the training process? You hear a lot about the different degrees of camaraderie within the corps, varying degrees of "gotcha" jokes to areas where some people just didn't quite get along. If you could just tell us some about the atmosphere and the relationship.

GREGORY: Okay. I'll bite my tongue.

BUTLER: [Laughter] Okay.

GREGORY: As I said, we had some attrition built into some of the selection. As you look to see the pictures of when the announcements were made and sometime later those faces weren't around again, and you're dealing with individuals, and that's like any other place with individuals, these guys a little bit more visible. But some of these people, I think, felt, and justifiably so, that, "I've got my Ph.D. in whumpty-wump, so that's me." And some of them just didn't fit in. Some of them just were not ever going to fit in. If they had stayed, they would have never flown.

As I mentioned, Deke was very good on getting his point across, and he told some of them exactly that: "Maybe you'd like to go find something else to do, because you're never going to fly." That's some of the times I was sitting in the office, "Oh, jeez, am I supposed to be here? Can I go somewhere else? I'm not sure I want to hear all about." But some of these guys had large egos. They were pains in the butt, to be very frank about it. As you can look at the pictures, they weren't around all that long.

You got the old experimental test pilot guys and you got the other selections that followed on, like when Tom [Stafford] and Neil [A. Armstrong] and those guys came in, got the scientist astronauts. It's like any organization, you know. "I guess you guys are going to have to pay your dues to prove yourself here a little bit."

Each one of them got assigned, together or individually. If you weren't on a crew, you were assigned to a system, similar to the way I was with Mercury, when each one would have guidance propulsion, whatever. That was their bailiwick, to kind of be the interface, crew interface with the contractor, the program office, and making sure it was astronaut-compatible.

So there was a group that always were trying to earn their wings, and some of them just didn't make it. The fact that they went through the whole selection process, they were selected, is something that you have to say is a plus for them. They, unfortunately, didn't fit in, and you can't really tell that when you're going through the interviews and all that. Sometimes you can, sometimes you can't.

There were guys that applied and never got selected, applied and never got selected, applied and never got selected. In fact, I think one of the more interesting ones was Jimmy [James] Brickel. Did you ever come across Jimmy Brickel?

BUTLER: It's not familiar right offhand.

GREGORY: He was in Flight Crew. He was in Warren North's organization. He was an Air Force detailee. He applied, I know, at least two times. There was a number we were going to go with, and beyond that there was a lot of great people, but they didn't make it, for whatever combination of reason.

Jim came over in my office one day and he said, "I'm leaving," said he was a detailee.

"Why are you leaving?"

He said, "Well, if you're going to be in the Air Force or if you're going to be in the service and there's a war on and you want to continue your career in that, you'd better damn well show up at war." That was Vietnam time. So Jimmy Brickel went off to Vietnam.

Jim Brickel came back, and, of course, that was what you call maximum attrition because he was one of the few people in his squadron that made it all the way through. The rest of them didn't quite make it. He came back and he had a star; he was a brigadier general. He got a star before any one of the astronauts ever got to that level, but he still wasn't allowed in the space program. And he was a good guy. He was really a good guy. I would have loved to see him make it. He was that type of a guy.

But, no, all these—they were always concerned about when you flew you got one promotion, and it got to a point, well, if every time he flies you've got to give him another promotion, you're going to run out of places for this individual to go. So it ended up we said, "Okay, they get one promotion."

Well, then as time went on, Al got to be an admiral and other guys got stars, but that's just kind of how that whole progression went. There were people that you looked at during the selection process and really would hope that they would have made it, but for whatever reason they didn't. It's probably about that much difference between the guy that made it and the one who didn't.

Did Tommy McElmurry talk to you about going through the selection process?

BUTLER: I think a little bit, a little bit. It certainly is a—

GREGORY: I think if we had had eight astronauts, I think Tommy might have been that. Very few people know that. He was right there.

BUTLER: Certainly a great guy. And there's—obviously there's a big draw for being in the astronaut corps, the excitement and the exploration side of things, to want to be on that edge and going out and—

GREGORY: You know, one thing, kind of talking makes you think about things. One of our biggest failures were these guys came out of different areas, but a lot of them were in the military. They were the elite. But we were so short-sighted. We trained them to take care of every situation that might happen, but we were very short-sighted on being able to train them and make them understand or be easy with the notoriety they got.

Buzz [Edwin E.] Aldrin [Jr.] is a prime example of that. Neil [Armstrong] became recluse a little bit. Buzz kind of went off the deep end. Mike [Michael Collins] didn't get the notoriety those two did. Mike's such a level-headed individual, I didn't think it really bothered him all that much. But these guys weren't prepared for that. No way. And it was tough. I mean, all of a sudden there you are, hero number one, and all these people are clamoring to get to you and interview you and shake your hand and all that. It just got kind of overwhelming for them.

BUTLER: Sure. Well, here they were trying to do their job and focused on the challenge of it and the engineering and the science, and yet, like you said, didn't have an idea how to—in fact, I don't think anybody really anticipated the impact.

GREGORY: Never. That was our big failing. And by the time we recognized that, I guess, that was like yesterday's news. We had so many flights, it was getting to be almost commonplace when we recognized, hey, we screwed up there. We should have figured out that we've got to at least tell the guys what's going to happen. You can figure out your own ways how you want to handle the crowds and everybody wants to kiss you and take you to dinner and whatever.

BUTLER: Certainly very different than normal everyday life.

GREGORY: Right.

BUTLER: Moving into the Apollo Program, you talked some about the fire and rebuilding from that and revamping. Were you involved in aspects of the planning side of the missions at all for Apollo and figuring out—you did mention with the crew selection and all, but planning where they were going, how they were going to do it, that side of things at all?

GREGORY: That really didn't get into our world all that much. The crew were involved, but a lot of that was done over in Flight Ops as to site selection for where you're going to land, what it looks like, and what you might expect, why we wanted to go there. That was not really a crew function. The involvement was probably lesser than just getting ready and going and doing it.

Now, when you made a site selection, "You're going to go do wherever, here's what we want you to do and here's how we're going to do it," then that got to be more crew training and procedures as to how you're going to go about accomplishing what I said we're going to do and whether it's driving the rover or putting a flag up or hitting golf balls or whatever.

BUTLER: Looking at the crew side of things, here you are dealing with—you're focused on their aspect, but did have that interaction with Flight Ops and with the engineering side. How was that relationship between the different divisions and directorates? Were there—I'm guessing probably like anything with people, there's times when it went really well and times that it didn't.

GREGORY: Yes. Our relationship was more towards the program office than it would be with the ops people. Now, there is a definite relationship there. By the way, there's competition there. The ops guys were, "We're going to control the mission and crew." "Like the hell you are. I'm flying this thing. You can sit behind your console and whistle 'Dixie.'" That's an exaggeration, but there was that kind of a competition.

There was also the competition because of the various egos involved, if I may say that, you had Christopher Columbus Kraft running the Flight Ops and Deke was running Flight Crew, and once again here's one of these little frank moments, but the Flight Ops guys were the type that, "We're the individuals that are making this all happen," Heir Kranz and his troops in the control center. And there was a certain amount of competition that way.

Engineering, you dealt more at a lower level in the engineering. As I said, crew members were assigned various systems, so they would work with the system guys in

engineering versus at the level of like Chris and Deke, versus Chris and Max. There were times when we had our meetings to figure out, "Okay, what are we going to do about this? Because this isn't working or this is tough to work," or whatever the situation may be. But most of our interface was at the program office.

There's another individual I guess I haven't mentioned, that I thought was, in my opinion, just a topnotch guy, and that was George Low. When we first got into the Apollo office, George was running that place and he eventually went up with Bob's deputy. But to me, George was one of these individuals that he was, once again, brilliant, but he was an easy person to work with. He was very easy to work with, and you can't say that about everybody, Bob Gilruth and George. Unfortunately, George left us rather early and that was tough. Guys like Joe [Joseph F.] Shea, he was more of a challenge in working in the program office. After George left and Joe Shea came on board, I forget what all the progression was in that world, but Joe was a little bit more challenging.

BUTLER: We've certainly—like with Bob Gilruth, we've heard a lot of good things about George Low, as well.

GREGORY: Yes. It just dawned on me, that's another individual that I thought highly of.

BUTLER: Certainly a very good one to fill the role that was needed at the time, again.

GREGORY: And he made some fantastic contributions. I think it was George that really was the key member, if I remember, on Apollo 8. LM wasn't coming along and George was, "What are

we going to do to keep this thing going so we don't lose momentum?" I think it was George that really was the kingpin on that decision.

BUTLER: Looking at Apollo 8, we did talk about that a little bit before, and the boldness of the decision and all, but also it was at a time when there was a lot going on in the world as a whole. You guys had been so caught up in the whole program and making everything happen, were you aware of the—like the civil unrest and the Vietnam War? Did any of that make a very big impact on you?

GREGORY: Yes. You're aware of it. It's kind of a tough situation, but I think you're still focusing on the program and there's always the competition outside for dollars, for budget dollars to keep the program going. Even though Jack Kennedy got up there and said, "We're going to do this," that's one thing, but to keep the momentum going and figuring out how much we need and how we're going to go about doing it, that's another thing. Of course, after he makes that kind of announcement, other things in the world happen and you're going to lose a little bit of the visibility on the outside world as to, "Hey, those guys are going to do what?"

BUTLER: I guess someone—after Apollo 8 returned, someone had sent a telegram saying, "You saved 1968." It was certainly a positive factor that you all were working on, with so much negative going on out there, the whole program.

As the Apollo Program went on, the LM did come up to speed and was certainly put up to test on Apollo 9 and Apollo 10. Then Apollo 11 came along, and we talked briefly about that before and some of the computer errors as they were landing on the surface. With both Apollo 8

and Apollo 11, you were finally achieving that goal that Kennedy had set, of getting to the Moon by the end of the decade, the one that had seemed such a huge challenge and whether it was reachable or not, as you said, Dr. Gilruth wondering how it was going to happen. What were your thoughts as those missions did make that mark and achieved that goal?

GREGORY: I'm not sure you had as much of a relief feeling after 8 as we did 11. You know, 8, as it turned out, was a good PR [public relations] situation, and I don't mean to downplay the seriousness of the involvement of what the guys did, but, you know, reading from the Bible on Christmas Eve and all that. But we still had a long way to go. At that time we still had a long way to go. I think you can't forget Mac's flight—[James A.] McDivitt's flight. You can't forget Tom's flight. Those were key steps.

By the way, another anecdote. Tom and Gene are going down to the Moon [on Apollo 10]. They're not going to touch down, it's not the flight plan, the mission rules. They're going down and they're going to go ahead and abort and go back up to lunar orbit. And something happened to the spacecraft. Once again, it was one of those things that we did not foresee, and the thing kind of went into an unusual attitude. Gene said, "Son of a bitch." Well, you asked what Don's job was from day to day. I wrote more damn letters to all these people that had come in with their complaints about, "We're paying all this billions of dollars to you guys for this useless program and then those guys are up there saying those terrible words," and all that. [Laughter] I had a lot of fun writing letters back to people, telling them, "You have to understand, ma'am," or sir, "that these people experience an unusual situation and their reaction was that, and, unfortunately, it got broadcast." Now that kind of language today is prime time and nobody thinks anything of it, but back in those days, "Oh!"

Tom's flight and Mac's flight were very, very important. In fact, I think if we didn't have the situation of Tom's flight, we would have probably not have gone with 11, the full lunar landing.

BUTLER: It certainly was—a lot of people debated on that point for Apollo 10, whether they should go all the way to the surface or whether they should just do the test.

GREGORY: Yes, but even beyond that point, should we go try another one? So if it wouldn't have been Apollo 11, it would have been Apollo 12. That was a big debate.

BUTLER: Certainly a lot of aspects that has to be looked at. I mean, there's so many different things that can happen and can go wrong and that need to be learned to make it all happen.

GREGORY: And once again, somewhere you have to make a decision and bite the bullet. There's people willing to do that, and it would have been a tragedy had we lost any crew up there. Like, oh, God, that would have been the end of the program. We've only been here talking.

BUTLER: Well, it did all go well, thanks to the training and to—

GREGORY: And by the way, when you look back at this thing, whenever us, the United States, [The] Boeing [Company], whoever, builds an airplane and goes through a test program of a new concept, it is not unusual to lose two or three crew. And we went a long time. You don't want

to lose anybody, but we went a long time. We lost a couple. We lost three good guys. But we went a long time without having that kind of attrition.

BUTLER: Very good success rate.

GREGORY: Yes.

BUTLER: And comparing between with the Russian program as well, they had several. Did you—speaking of the Russians, were you very aware of what they were doing during this whole time frame or—

GREGORY: Not really. I suspect that the guys in headquarters were more aware than we were. We were more geared into what we were doing down here. There was always the, "Oh, the Russians are doing this, the Russians are doing that," kind of like, "Okay," but I don't think we were—yes, there was a definite race, competition, and all that, but I don't think we were terribly worried about that, because it made no difference. If they did something like that first, well, that would have changed what the program was.

BUTLER: With the—as the Apollo missions went along and they began to get more focused on the science, once they'd actually achieved the landing and after the recovery from Apollo 13, began to focus in on the science side of things, did you have much interaction with the scientists that then came to work with the crews and doing that training?

GREGORY: Yes.

BUTLER: [Laughter] Biting your tongue on that one, too?

GREGORY: Probably.

BUTLER: That's—

GREGORY: Going back, of course, when you don't know what the heck the situation is, there's always Dr. Jones and Dr. Smith, who are eminent scientists and they have like, "How can you guys be so far apart?" When we were talking about landing on the Moon, of course, what ends up happening is the guy that was totally wrong, that kind of just goes away and he goes and fights another windmill, and the guy that was right, like Gene Shoemaker, he gets his recognition.

But there were some pretty wild ideas sometimes. In fact, to begin with, we had the Chicken Little's running around, like, "Oh, the Moon is hundreds of feet of dust and we'll just sink down there and we'll never see those guys again." And we didn't know whether it had a hundred feet of dust or was like the surface of the carpet here or whatever at the time we were doing some of this. We figured we wouldn't worry about that until we got some more data. But the guy with a hundred feet of dust could have put as much worry—you know, we had so many what-ifs that we could have what-iffed ourselves to still not doing anything, still worried about it today.

But you had—I'll bite my tongue. It's like the medics back in the early days, you know. They went through testing with those guys. You look back and you say, "What on earth? What the hell were these guys thinking?" "Oh, we've got to put them through all this rigorous testing." Yeah, right. And what did it show? Nothing. Like that MASTF thing they had, Multi-Access [Spin Test Facility]. That was the most stupid thing we ever had the experience in the world here. No, there was a lot of different things that you look back and you see we should have never got involved, but it was these guys running around with their little—if you can excuse the expression—science. "What happens if? What happens if?"

BUTLER: Certainly a lot of unknowns.

GREGORY: Yes, and, you know, you tried to address the ones that you feel like you have some validity, but, you know, there's a lot of people that felt, "Well, yeah, but." And you can't satisfy all the concerns of everybody.

BUTLER: As the Apollo Program came to a close, you had mentioned that you knew along the way, as some of the later missions were getting canceled, and you mentioned actually standing there with Joe Engle as Apollo 17 launched, did you have any thoughts at the close of the program, as to that it was time to move on to the next step or that maybe lunar exploration should continue in a different way? Did you have any views one way or the other?

GREGORY: I think the trauma was more of "The program's ending and, yes, there's follow-on, but it's never going to be the same again." And when you get through a situation like that, that

you've accomplished that type of thing, I don't want to say it was kind of anti-climatical, but it was anti-climatical, really. Even the ASTP, that was kind of like—I don't want to downgrade it, but it was kind of, "Okay, so there's another one." And even the Shuttle Program.

We always were trying to strive to the point of getting to be where we're like at the airport, people who go out there and watch the airplanes take off or land every day, and we were always kind of hoping to get to that point, but it was a noticeable change of attitudes and everything after Apollo just shut down, because it was kind of like the next thing was down here a little bit. It was different, it really was, even though you had Skylab coming up and eventually ASTP and then downstream Shuttle.

I don't want to—a guy like Max Faget was always thinking about six miles ahead of everybody else, but it was kind of not a slowdown, but it was like a slowdown.

BUTLER: Going to the Moon is certainly very exciting and it certainly captures the imagination and whereas Skylab and Shuttle are more closer to home, they're Earth-related, and so—

GREGORY: We've been there, done that.

BUTLER: Well, hopefully we'll see some of that excitement come back into things eventually.

Moving into Skylab, your role changed slightly and you were then the Manager of Management Operations for Flight Crew Operations. Did that really change many of your duties or was this just one of those reorganizations?

GREGORY: A reorganization. That's just a new name when we went through a difference of breaking up the Yankees. Kind of the same thing at that point.

BUTLER: With Skylab, what were some off—it's such a different program from what you had been doing, as you said. I mean, here you've been shorter duration missions, striving at going toward the Moon, and Skylab was going to be long duration, three flights, and very science oriented. What were some of the issues or the challenges in making that transition and getting ready for that program?

GREGORY: I think it's just a difference in the concept. You're looking at—we had this idea and now what do we do? We're going to have guys floating around in this thing. What are we going to have them doing? Once again you get all kinds of ideas from the outside, but by the same token, you don't want to do anything stupid or you don't want to do anything that you don't see some kind of a benefit from. But you have to go through the thought process, okay, so what are we going to do that we feel like is beneficial? And that's a different approach than what we had in Apollo. We kind of knew exactly how we were going to do it. Skylab was kind of, okay, let's fill up the bucket. I felt like that's the way it kind of went.

BUTLER: Once Skylab was up and they had the—actually, during the launch they had the problem that the shield ripped off, one of the solar arrays was ripped off and the other one jammed, and then the crew had to to—the crew and all the ground personnel had to come up with the new solution and how the crew could enact that to be able to save the workshop. Were you at all involved in those discussions and that period of engineering and—

GREGORY: Yes, but, you know, that's almost like an iteration away from Apollo 13 type of thing. I don't want to make a direct comparison, but, you know, we've kind of experienced that type of a situation in a different way before. So it ends up being, okay, what do we need to do and how are we going to go about doing it?

BUTLER: Put all those skills to work.

GREGORY: And once again, you look back, and hindsight is always 20/15, but you look back at some of this stuff, the things that we learned, whether voluntary or involuntary earlier, really help downstream considerably. When things happen, you have a different attitude versus crisis time. In the early part of the program, you had a lot of, "Oh gosh," where downstream, yeah, it was something you needed to do and it was serious, but it wasn't like, "Oh my," and start your hand-wringing.

BUTLER: You talked—we've talked a couple of times about Apollo-Soyuz being the next, in between Skylab and Shuttle, and obviously Deke Slayton's and Tom Stafford's major role in that, a few stories there. What were—from your aspects, since you then were taking on more of those duties as they were off training for the mission, and a challenge obviously was sometimes getting them into the office if they had been out with the Russian crew the night before. What were some of the other—here you were working now with a completely different country, different languages, different—differences in engineering, even though the same principles. Were there any major issues in integrating all of that and bringing it all together or—

GREGORY: Yes. Yes, there were. First of all, the crew went ahead and they went through a Berlitz course. Russian, as it turns out, is a very difficult language. They were trying to get to a competency level where they could maybe understand a bit, because there was not going to be an interpreter with them. Then, like any situation, except it's probably magnified considerably because you have the United States guys on this side and you have the Russian guys on this side, as to how we're going to do this and who's going to win the battles, so there were a lot of different challenges there as far as building the docking and who's going to do what to whom and how was it going to do it and that type of thing. I guess at that point it was almost like a natural progression of trying to integrate these two countries and two vehicles to make it all happen.

The one good thing is, I think the motivation on both sides was wanting to make it a success, because it was recognized that someday, someplace, somehow, sometime we're going to have to have a relationship where we might have to go rescue the other guy and bring him home, and you don't just drive up there and say, "Hey, come on over," because it doesn't work that way. Even building the docking mechanism, I think, was a very plus thing, because you can see how that affected downstream here in the Shuttle and the Space Station.

BUTLER: Did you anticipate that there would be any follow-on joint efforts like that?

GREGORY: No. We knew that there's going to be crew members that are not going to be nationals, United States nationals, on board our vehicles, but we didn't anticipate the fact that we

eventually ended up with Mir. That was not really—we didn't have that much of a foresight. We couldn't see that much over the horizon.

BUTLER: It certainly is an interesting development since—

GREGORY: But once again, it was a spinoff of that that allowed all this to happen.

BUTLER: We've talked a little bit about Shuttle and your role as logistics manager, but there were some—was some time here between ASTP and Shuttle where no flights were going up at the time. During this time, were you just working in that role and trying to figure out what it was and where it fit in, as you mentioned before?

GREGORY: Probably. [Laughter] That was a transition time in my time at NASA. As I said, we broke up the Yankees and the Flight Crew [Operations Directorate] went away, as it was known at that time. I guess that was about the time I started thinking, "Well, I've had enough of this fun," and it took a while for me to bite the bullet and say, "I really had enough of this fun. I'm leaving." But it was a period of time that if I look back and look at the smiles and the frowns, that was probably a frown time between ASTP and the time I left, and probably the time between ASTP and the program office, that was probably more negative than just working in the program office. That was a different type of challenge, working in the program office and logistics. Since I didn't know anything about that and what the hell was going on, that was enough to keep me interested for a little while. But I think that was about the time I decided time to go look at mountains or whatever.

BUTLER: Well, Shuttle was certainly a very different vehicle, again, from everything that had come before. Did you have any thoughts on it just in general, as to what its capabilities were going to be or what its future was going to be like, or did you just kind of go with the flow?

GREGORY: Well, I don't know if anybody brought this up. I'm sure they have. But the Shuttle originally was going to be all off the shelf. We weren't going to do big engineering. We were probably going to get rid of the control center per se, and we weren't going to need a 50-man team in the control center. You might have like the aircraft situation is today, with your various stations. You only have one or two people in the control center there that are talking to the various aircraft and having them fly over. They have control there, which they don't, but they keep everybody from running into each other. And that was the basic original thought of the Shuttle Program.

We were going to downsize the operational influence and were going to have an off-the-shelf type of vehicle. As you can see, that really went very far. We went back and reinvented the whole damn system all over again. It ended up being, I guess, where you'd look at all this stuff and, yes, there were a lot of benefits for what ended up happening, and you had a different viewpoint on how this thing's going to fly and what you need to make it all happen that way, but basically the internal type of systems could have been the same. They were modified considerably.

BUTLER: You've mentioned, as we've been talking here, several different individuals who've had a big impact on you, like Dr. Gilruth and Deke Slayton, Tom Stafford, George Low. Are

there any others that you can think of that made an impact on you personally or on the space program as a whole that you'd like to mention?

GREGORY: Well, there were working relationships of people that—well, Tom McElmurry is another one. There were working relationships with people like Pete [Carroll H.] Woodling and Jimmy Brickel that they were fun guys to work with. Jimmy Brickel was part of Pete's organization, Pete Woodling's organization. They were easy guys to work with.

Al [Shepard] was an easy guy to work with. About the time of his death, a lot of people brought out that there were guys that were afraid of Al. And he could come across like "grr," but he was an easy guy to work with. We had a good relationship. I enjoyed Al.

Johnny Young. [Laughter] John's a kick. John is a kick. I really like him. And Mike Collins, Neil [Armstrong], we've all gone our separate ways, but Neil was a good guy. McDivitt. In fact, Mac lives down part time in Tucson [Arizona] and I've got to call him. That's one of those things I got his number from somewhere and I've got to go find the darn thing. I don't think he lives very far away from where we are right now presently, but I've got to go look him up. Mac was a good guy.

There were a lot of the crew members that were—I felt were super troops, and there's some that—

BUTLER: I think you find that anywhere.

GREGORY: Yes. People are people.

BUTLER: Absolutely.

GREGORY: But, you know, that's my own little sphere. Looking outside the sphere in some of the other organizations, I always felt good working with Max Faget, and maybe it was the influence of the organization, but the ops guys, I just didn't feel that comfortable working with them, the Flight Ops guys, although there were guys over there that were people that were very friendly. But the relationship there was not like the relationship with some of the engineering guys, some of the program office guys, or guys in the program office who were good troops that you felt good working with. And influence, well, I don't know. What I can say is the influence that they would have on relationships is guys like Bob [Gilruth] and George [Low] and Deke, Tom [Stafford], Al.

BUTLER: Well, it certainly took a lot of people to make all this happen.

GREGORY: Yes. And I feel I was very fortunate to be where I was, when I was. It was a different situation that is unique to where I was. Other people were part of the program, but somehow or other, I felt like I was in a unique situation through most of it.

BUTLER: It certainly was a very unique time.

GREGORY: Yes.

BUTLER: To be working in and living through. Looking back over your time at NASA, was there any point that you would consider—or any two points that might be your most challenging moments? And then maybe that you feel is your most significant accomplishment?

GREGORY: Challenging moments, I guess revolved around the guys like Charlie Bassett, you know. I was reasonably close. And Gus [Virgil I. Grissom]. That was a challenging time. That was a tough time.

As far as the years, I think those kind of went along with the way things ended up. The times that there was a big smile on your face, I think were part of the end of the success as to how things worked out. So if you had the kind of time frame, I think that's how it would work, how I would look at it.

BUTLER: Well, things certainly did work out very well.

GREGORY: Yes.

BUTLER: Despite problems along the way or unfortunate happenings along the way. It came out pretty well in the end.

GREGORY: Yes. Very much so.

BUTLER: I'd like to—before we close, I'd like to see if Kevin has any questions.

RUSNAK: I did have a few. Two of the things that have kind of remained murky, I guess, in the history are the process behind both astronaut selection and crew assignment. Perhaps this murkiness is intentional. But now that both Deke Slayton and Al Shepard are gone, I was wondering if you could shed any insight into how these things worked during the Gemini and Apollo Program, or specifically when you were involved there.

GREGORY: Assignments to crew, the bean ended with Deke. The way Deke would evaluate who was going to go where, he and Al would sit down. Al was head of the Astronaut Office. They would talk over individuals, as to what they thought. Of course, as some guys got experience, flight experience, that counted for quite a bit, but bringing in a new guy or bringing a guy that was on the way in there, was kind of how all that was weighed. But Deke would talk to Al. But he sat down by himself and made the selection. Al had an influence. Deke would also talk to Warren North, get a little bit of the insight as to how the guy's trained out. But if you had to put it on the level, Warren's input here, Al's input there, and Deke [Gregory gestures].

Now, after Deke made the final decision as to the composition of the crew and what the sequencing of the crews were, he shared that with George Low and, of course, Bob Gilruth, but that was Deke's kind of interface with that type of thing. Then somewhere between George and Bob, they let Headquarters know who is going to be there, and it was like that. Who was going to fly. As I said, there was only one time Deke ever got overturned, and that came from Headquarters. "If you have scientist astronauts, especially a geologist, you're going to fly them before the program's over." But as far as any other assignments or adjustments to the selection of who was flying, that was always Deke.

As far as the astronaut selection and different selections, it ended up being a bunch of people involved, obviously Al. Don was involved, this Don. Warren North. Jack Cairl from Personnel as to making it all happen personnel-wise, getting people there. We had some of the people without the organization involved to go get the hotel rooms all organized, a room for the interview, that type of thing, and what the criteria were. And I think really a lot of the influence of getting away from the experimental test pilots going down or up, however you want to look at it, thinking that you want a tough old experimental test pilot or an educated troop, a lot of that was outside influence as to what we really need.

As far as numbers, that was just the numbers game, as Deke would say. We're going to have so many flights, we need so many crew, we need so many backup crew, got the prime and the backups, we need the support group, need so many other guys running around with the systems. So that ended up being a numbers game. We need so many because here's the time we're looking at flying. When we fly some more, we're going to need some more. That's how that process got.

As far as we'd go out, make the big announcement, we're looking for a bunch of astronauts, and all these guys fill out their little paperwork. "This is me. I've got so much flying time I went through. I've got a Ph.D. from "Super University," how great I am, "and you looked at a lot of different aspects of the individual. It wasn't just how much flying time you have or if you got a doctorate or six doctorates or whatever. You looked at the individual. You got data on that individual as an individual. What is their personality? Excuse the expression, not the shrink type of situation, but people that worked with them. [We also got their medical information and they had to pass a medical exam. Our medics were part of the process, Charles

A. "Chuck" Berry, A. Duane Catterson, and others.] You got that type of data and you had criteria set up before we'd start the interviewing process. You'd go through and you'd rate them.

Then there's putting heads together. Okay, we've got this number, narrow it down. Got this number, narrow it down, till finally the ones that got selected. Then Deke would get on the phone and call these guys. That's how they would be notified. "Do you want to be part of the astronaut corps?" "Hi, this is Deke Slayton. Do you want to be part of the astronaut corps?" That's about how it went. [Laughter]

Does that answer it pretty much?

RUSNAK: It does. I don't imagine too many people turned him down when they got the phone call.

GREGORY: I don't remember any turndowns.

RUSNAK: Not surprising. One of the things you mentioned before was this sort of hero aspect of being an astronaut and how that weighed heavily on them. I was wondering how you, as someone who worked closely with them from the time you first met an astronaut through the years, how your perception of these guys changed, since you would probably see them as real people and not as whatever image they were presenting.

GREGORY: I'm not sure how to answer that. I guess it's like any relationship, when you meet somebody and over a period of time you get to know them and get to know them better. There were guys, as I say, I felt close to, and there were some, we worked together and I wasn't

necessarily as close to them. Some of that was just by the fact of the interface of how that all worked out, what their assignments were, what their daily relationships were, versus whether we had more one-on-one type of thing.

But once again, people are people, and you can put 100 different people in a room and you're going to have some people are going to be close to each other and some are not, and those others may be closer to some other people. It's just, I guess, human relationships.

RUSNAK: Did you participate in their "gotcha" games, where you played tricks on each other or whatever, those kinds of jokes you might want to share with us?

GREGORY: [Laughter] Wally's [Schirra] the biggest "gotcha" guy. Yes, there's one time that Wally bought this Mazerati, I think, which I think really turned out to be not a good wise buy on his part, because he had some problems with it. But all of these guys, there was a relationship with cars that, you know, you hear a lot of different stories, but this particular one was Wally got this Mazarati and he's strutting around with it, tweaking Al [Shepard] about it. Wally went out of town. Al had a lot of different relationships, and one of them was with [Bill] McDavid [a Houston car dealership], and in front of Building 4 there's assigned parking spots for Al and Warren [North], and then there's astronaut spots, and "also rans." I think the "also rans" were across the road there.

Al went ahead and got a Ferrari he borrowed, and he knew when Wally was coming back into town, and so he got to drive the Ferrari up and park it in his spot. Wally came back from travel and he came in and looked at that thing, didn't say a word. And that went on for I don't know how long, but it finally got to the best of Wally. I don't know if he first thought it

was somebody that just happened to be parking in Al's spot and what the hell was he doing there, but finally I guess he went down to talk to Al about, "What's that Ferrari doing in your spot?"

"That's mine." A typical Shepard smile. "That's mine."

And, oh, that just cracked old Wally up. That went on for a little bit of time and finally Al just, "Gotcha."

There were some other guys that used to participate in the "gotcha," but most of them were pretty serious, and they were fun-loving, but some of them were not good "gotcha" guys. Whenever they tried, it would fall like a plop. [Laughter] But Wally, I think Mr. Schirra was probably the king of all that.

RUSNAK: We've heard a lot of stories about him and pranks, some of which didn't necessarily go over so well and others that did.

One last question. Going way back, you had mentioned that you spent some time working at the NACA. I'm always interested to hear about people's work there. I understand that you worked in the Unitary Plan Wind Tunnel, for instance. Could you tell me a little bit about the work that you did there?

GREGORY: Okay. Unitary was the name, was identified that way because they were going to have a system of tunnels throughout the NACA centers, and they were all supposed to be kind of compatible or something like that. Anyhow, it was a unique type of a tunnel, a supersonic, and if I remember right, it had a three-by-three test chamber, of course long, eight, twelve feet, like that. And that was, at that time, unheard of, as far as being able to have supersonic flow.

Of course, you had models of the aircraft, high-fidelity models of the aircraft, that you would put in there and you'd put them on a sting, which was going in the back side, and you'd have them all instrumented so that you could tell the various aspects of the aircraft as far as your lift and drag and everything else.

At that time you were testing all types of aircraft, supersonic, to see how efficient they would be. We did some B-70 work in there. That was an unfortunate circumstance, the B-70, what happened to it, and the program went down the tubes. That all ended when Joe Walker got killed in a B-70.

But B-70 was supposed to be the frontrunner of the supersonic transport for the United States, and there was some unique characteristics of that utilizing the shockwave off the nose that you would capture on the lower wing and get the extra additional pressure to help make it more efficient. It was utilization of the shock wave to make it more efficient on flying. Of course, like any type of environment like that, you'd test it for various altitudes as to what is going to be the most efficient altitude so that you could get the most range out of it, with the least amount of drag.

There were other fighter-type aircraft we were going through, and I think I did some F-4 work at that time. In being a little project engineer, you had your little project you put together and you were told, "Okay, this is what we want to find out," and so you went ahead and you did your thing and you wrote your little report. I don't know how many reports of F-4 I have, but I've got a number of them somewhere.

They started bringing over—this was after the time I left—they started doing some of the ballistic trajectory work in unitary with what was, quote, going to be the Mercury Atlas configuration, and everybody always thought you had a real pointed type of situation. Gee, that

wasn't as brilliant an idea as having a rounded nose cap. So there's that type of work that was being done in that type of a facility.

RUSNAK: Thank you.

GREGORY: I'll tell you one more "ha ha, gotcha." For years I went up to Nebraska, hunting. Still do. And Tom [Stafford] and I were after work one day having a drink and I was telling him I was going up there. This is Tom Stafford. He came over to our office. Of course, Tom's from Oklahoma, and he said, "Do you ever go through Norman [Oklahoma]?"

I said, "Oh, yeah." At that time we used to stop in Norman. Not Norman. Oklahoma City. Norman's just south of it. We'd stop at "Oke City," that would be half way, and we'd spend the night, then we'd go up the next day. I said, "Oh, yeah, we stay at the Continental Motel out there."

"Oh, I know that one. When you gonna be up there?" I told him. He said, "I've got a good friend," his friend "Mac" from Oklahoma City. I think Mac had a trucking company. Mac had some dollars, and I think Tom and Mac had some investments together. Tom's investments, by the way, if you ever wanted to make money, find out what Stafford was doing and do just the opposite. [Laughter] If he bought low, you want to say, "I'll buy high."

So anyhow, the idea was that Mac was going to meet us when we were up there and he was going to take us out to dinner and show us Oklahoma City. So we drive up there. There's three of us. Check in the motel. I said, "By the way, I'm Don Gregory. Is there any messages for me?"

So we sat around for a while. "Any messages?" No. So we finally waited and waited and waited and said, "Oh, hell, let's go eat."

Come back, no messages. So we got up the next day, we go up to Nebraska, we do our hunting. While I'm up there, I call back to the office, and Tom gets on. "Did you meet Mac?"

"No, Tom. He never showed."

"Oh. Where are you? I'll call you back. I'll find out what happened."

So he called back. "Mac had something happen. He had to go out of town. His apologies. When you going back through?" I told him that. "Oh, well, Mac will meet you, and this time for sure he's going to meet you there."

Okay. So we go back and we do the same thing. We stop in Oke City at the Continental and go home. So we stopped there, check in. "Hi, I'm Don Gregory. Have any messages?" No.

So we were waiting. There's three of us. It was a nice day and we had the door open, and we're playing three-handed poker, having a cool one, waiting for Mac to call. Mac never called, but we had these two ladies come by, and they started talking to us. "We're waiting for somebody to call us. Thank you very much," and all that. And they tried to proposition us. "No, thank you. We're supposed to go out this evening with some friends."

And after they left, I think it was Clyde or Tony said, "You know, they know more about us than we—" They were asking all kinds of questions, like, "Where are you guys from?" and all that, but they knew more about us than we really told them. I think we were set up.

So we come back to Houston, you know. I come up to the office. Nothing's ever said. Nothing's ever said. Nothing's ever said. Nothing's ever said. Time's going on and on and on.

One day somehow or other we were just chatting, and Tom didn't bring it up, I thought, "Now's a good opportunity." "By the way, you remember the time we went up to Nebraska hunting and "Mac" had to go off somewhere and couldn't meet us and you said that Mac was going to meet us on our way? He never showed up."

"Really?"

I said, "Yeah. You know, a strange thing, Tom. We were sitting there, we had the door open, it was a nice day, Tony and Clyde and I were playing three-handed poker, and a couple of people come by." He smiled. I said, "You son of a bitch." [Laughter]

You wanted a "gotcha." That was another "gotcha." [Laughter]

BUTLER: Certainly sounds like a good spirit there between you. [Laughter]

RUSNAK: Those are all the questions I had.

BUTLER: Is there anything that you can think of [directed to Gregory] or you can think of [directed to John Gregory] that we haven't necessarily covered, or any questions you want to ask your dad while you have the chance?

JOHN GREGORY: All I remember was, he was never home. One time I remember seeing him was Mom taking us up to NASA and we'd go up to his office and he's back there on the phone or doing whatever, his feet up on the table, smoking a cigar. I have another friend whose dad was at NASA also. I was talking to him about it, and his comments were, the only time he

remembers seeing his dad was when they would go to the airport to pick him up. Charlie Shannon's dad. Because they were always on the road.

GREGORY: Yes.

BUTLER: Hopefully now you can see some of—

JOHN GREGORY: I hated the NASA tour. I hated when people would come to town and we had to do the NASA tour. It was nowhere near what it is now. It was bad.

GREGORY: [Laughter] Yes, that was the image I keep hearing about. Sitting there, talking on the phone, feet up on the desk, smoking a cigar. That was Dad. Oh well.

BUTLER: Now you know a little bit about what he was doing during all that time.

JOHN GREGORY: My daughter had a project that was due this week on math in the real world, and she had to write a paper on how her family members are involved in math, how math has been a part of their lives, and with Grandpa, he's a house seller. She has no idea of any idea about this [NASA involvement]. Little does she know there was a lot more math in your life than doing houses.

BUTLER: A lot more. Hopefully you can share this with all the family.

GREGORY: Well, you know, I went through school and all that kind of good stuff, and in engineering you have all those type of halfway smart courses of learning math and some science crap and all that. Life goes on, and John decides he's going to be a veterinarian. I'm down here one time and he's studying, and I'm looking at it. "What in the hell is he talking about?" I had no idea. He's about 20 sizes ahead of me on what he's studying and stuff he was learning. I could have never done that.

BUTLER: That's good. Well, he learned from your example of taking challenges, it sounds.

Thank you for sharing all your experiences with us today.

[End of Interview]