ORAL HISTORY 2 TRANSCRIPT

GUENTER F. WENDT
INTERVIEWED BY CATHERINE HARWOOD
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HARWOOD: It's February 25th, 1999, and we are in Titusville, Florida, with Guenter Wendt. And we're going to ask him some questions about his career with the space program. Let's start with something real basic and really a long time ago. And I'm curious, when you were growing up in Germany as a kid, did you ever imagine that—what was ahead for you?

WENDT: No, not in that line. But ever since I was in grade school, I started with building model airplanes. Well then after that I graduated to flying sail planes. And I always was interested in flying machines, so to speak. So I actually signed up to learn to manufacture aircraft, and I started with Henschel at that time. At the same time I went to evening classes to make a degree in Mechanical Engineering. So I didn't have much of a fun youth, but nevertheless then after all that was pretty much done we had something that they called World War II. And with my background, I had an offer from the Air Force to go in as a Second Lieutenant if I would sign up for 12 years, which was detrimental to my outlook on life. I didn't want to sign up for the military for 12 years. So I said, "No, I don't do that." So they said, "Okay. Then we must come and get you and you'll become a Buck Private." So it didn't take long they sent you the typical postcard greeting "To know we'd like to meet you."

But nevertheless. So then after basic training is when I wound up in a night fighter group, flying Junkers 88s, as flight engineer. And then we run out of gas, end of the war, I wound as a parachute—in a parachute division, the 5th Parachute Division. And then after the war, it turned out there was no need for anybody who knew anything about airplanes because there was no industry whatsoever. So after that, since my parents were divorced (I

mean, the father—my father deserted the family but he was American), so I said, "Oh, let me use the last known address and see if maybe I can make it over to America." And sure enough, he hadn't moved. So we got in contact, and eventually he sponsored me to get over there. And in [19]'49 I arrived in the United States. So by that time he had all the talk to the Mr. Mac, J. [James] S. McDonnell [Jr.] [President of McDonnell Aircraft Corporation], and told him that he had a son who did this and this. And Mr. Mac said, "Oh yeah, I'll be glad. We'd like to have him." So I interviewed with McDonnell, but then found out that since Germany was still legally at war—even in '45, in '49—with the United States, that they couldn't hire me.

So I had to take all kinds of jobs until I finally wound up with working for an airline. Started up with a start-up airline like Ozark Airlines in St. Louis [Missouri]. We had five beaten-up old DC-3s, which was rather a good experience to learn aircraft again. And after 5 years of it, I was a citizen. And then I immediately changed over to McDonnell at that time, and started off in the design department and had various jobs there.

A rather intriguing thing that happened then…when you have these things with Confidential and Secret things? I designed a lifting mechanism at that time to carry in the B-52s, the decoy missiles. What we called the "GAM-72." They were little airplane-type things that would fly formation around a B-52 bomber to attract enemy aircraft or missiles. And we had a final review by the Air Force, and I was supposed to make the presentation of the system, how we were loading it, and found out they wouldn't even let me in the room because it was then classified Secret and only had Confidential clearance. So even though I designed the system, I couldn't present it!

Well then, after a while, I heard the rumor that McDonnell was trying to bid on a civilian program called Mercury. So I looked into it, and it sounded interesting; all kinds of fantastic things. But no one there had ever done anything like that. So I talked to the project engineer and I says, "You know, you actually need somebody who can do both things,

engineering bias and all the hands-on." Since I had now had to think, I had made a practical apprenticeship in aircraft manufacturing. I knew how things were put together. And I had a Mechanical Engineering degree. And they said, "Okay, that sounds like a good idea." So I wound up on Project Mercury. So then we built the stuff. And—but before we ever got done, we said, well, we had another program where McDonnell had contracted with the Air Force to design, develop, and proof-test a boost glide vehicle, which was called a Alpha-Draco.

And so again, I thought to get experience on rocket launchers, I transferred over to these people and I became responsible for the launcher of that boost-like vehicle, which was actually a solid, two-stage rocket that we had modified—an Honest John launcher—and launch it here from the Cape [Canaveral, Florida]. Now if you want to compare prices these days. Now this is in '58/'59, McDonnell had agreed to bid to design, build, test fly, and deliver the data to the Air Force for three complete missiles for $5M. And we did that. For $5M! Now compare that to today's prices. Anyhow, this was a first exposure to Cape Canaveral at that time.

On one of the flights we had here, they permitted us to take the families down, and I took my family down here and we stayed on an old Seaspray Motel on the beach in Cocoa Beach 30 days. And my children (I had two girls at the time; they were with me there) really liked the beach. The wife liked the beach. And I said, "Now, if I would get a permanent job down here, would you like it down here?" Now coming from St. Louis, you know, the beach and seeing orange trees and things like that was fascinating. So they said, "That would be a good idea." So then when Mercury came along, I managed to get down here as one of the first representatives for McDonnell. We were five people and we opened this shop down here.

HARWOOD: Did you know what—I mean, at the time, did you know that you were basically talking your way on to what was really probably the most exciting place to work at the time? I mean, did you know that? Or was it—

WENDT: No, actually it was always my idea I wasn't made to do repetitive jobs. I always said, "Look what you like to do, then find out what it takes to get the job. And then convince the powers-to-be that you are the man they need to do." So I always thought about to say, "Okay, what do I need to do?" And then I said, "Okay, here is what you need and here is what I have." I always would go after the job I like to do. And anything new, fascinating, was it. But then all through the years, although I took 42 extension courses in order to stay on top of it. Because then, after Mercury, Yardley (John [F.] Yardley was my boss at the time), I said, "I'll tell you what. I'll go with Gemini." He says, "What the heck do I need you on Gemini for?" you know. And I said, "Look, you need this, this, this. I have all these things."

And then we talked about, you know, hypergolics, cryogenics, and things like that. So I had taken extension courses. And so again, he said, "Yes, that sounds great." And by that time I had somewhat established a way of operations that, as a matter of fact, [John H.] Glenn [Jr.] labeled me a "pad Führer." As a matter of fact, on one of the pictures you'll see it. He said I reminded him of somebody that he knew in history who was somewhat on the dictatorial side. And I indicated, I said, "No, it's not really that bad just" (you see us on that picture) "just do what I tell you and you'll have no problem." So that's when actually it wound up that I later was labeled the dictator on the pad, which wasn't really true. But then again, you had to realize you are playing with things which can go wrong in a hurry.

And I spent many, many nights on the river in my boat playing the "what-if" game. Because there were many, many things we didn't know. And we did dumb things. We did things we didn't know. I remember one thing on Mercury, way back when, we had an

explosion at the Cape in the Spin Test Facility where a solid rocket ignited because of the plastic static electricity that was. And I found out our escape rocket in Mercury was wrapped in the same plastic that blew up in the spin test. So here again, you learn things that you didn't know existed. So then you think, "Okay, now, if we go out later on when the vehicles are flight pressurized or things like that, your chances of survival are relatively slim." So and in the early days, when you talk about the late '50s/early '60s, the average rocket here. Three out of five didn't make it. So the failure rate was rather high. So when we got to be—it wasn't that tragic when you just had a nosecone on it. But then when you all of a sudden said, "Okay, now we have a human being up there," somebody you know, then the picture changes drastically. So you sit down and you play the "what-if" game. What if you see this? What can you do if you see that? And so on. So I spent many ungodly hours; like I said, the best place to be was sitting in the boat on the river and just playing the "what-if" game.

HARWOOD: Well, when you first came down here, in what year was that, when you first—

WENDT: [19]'59.

HARWOOD: In 195—

WENDT: In '58. That was when I came with the Alpha Draco in '58.

HARWOOD: And you were with McDonnell?

WENDT: Yes. I stayed with McDonnell—

HARWOOD: It wasn't even McDonnell Douglas at the time.

WENDT: No, no.

HARWOOD: It was McDonnell Aircraft Corporation.

WENDT: Right, and—

HARWOOD: What was your first job with—for them here?

WENDT: Now that was again, I was the—Okay, we had an interesting thing. I was supposed to be responsible for the pad operations for the spacecraft. Now you're going to realize all through my active career I had very little to do with the boosters or the rockets itself. In other words, I knew the basic fundamentals of it but I had no input as to what they did, how they did, or when they did. So essentially I was responsible for the spacecraft preparations for launch. In other words, once a spacecraft hit the Cape, then we had to coordinate who wants to do what or who must do what from the time it got here until we launched it. That was my job—

HARWOOD: And this was Mercury.

WENDT: That was Mercury. And similarly on with Gemini. And that was my job to go ahead and coordinate all these efforts. So in the beginning, then I worked with—I interfaced with the Huntsville [Marshall Space Flight Center, Huntsville, Alabama] people, with Wernher von Braun and Dr. Greeley and Dr. [Kurt H.] Debus and [Joachim P.] Kuettner and so on to correlate. Because, you know, we were still doing something that hasn't been done before. So that was essentially my job: to shuttle the spacecraft through that, and that was

going all the way through launch. Now once the thing lifted off, that was the end of my responsibility. Then I didn't have anything to do with it.

And the chain of command actually is that I reported strictly to the test conductor. Now it was a little interesting in that somewhere in this operation I would change allegiance. In other words, in the preliminary stages, and even especially on Apollo, each section has their own test conductor, like McDonnell or North American [Aviation, Inc.] had the capsule, and then the [Saturn] S-II had a test conductor, the first stage had a test conductor. And then at some point they merge to the CVTS [Complete Vehicle Test Supervisor], I mean, or the NASA test director. And see then I would report to a NASA test director. And the unique position was that, even through all this time, I did have the ability to stop the count if I saw something wrong, but I couldn't make it go again because somebody else had to make that decision. So that was the basic concept that we had. Because early in the game, one time, Annie (John Glenn's wife) asked me, she says, "Can you guarantee me a safe return of John?" And you know, you asked them out to meals over to our houses and things like that. And I told Annie, I said, "Annie, anybody who would guarantee that is a liar because there are so many unknowns that nobody can really guarantee you a safe return." I said, "The only guarantee I can give you is that at the time when I say 'Let's go,' there is nothing that I know that could be detrimental to a safe return. Beyond that, I cannot give you any other return guarantee. Because what happens after that, we do not know."

But there was another little interesting sideline, if you want to have little stories, where we were working on Mercury. John was a Presbyterian, and I had visited the Presbyterian church on the beach there in Cocoa Beach. And at that time they had about 30 young people staying for 2 weeks at the church, you know, going to the beach and using the church as their kitchen and to sleep there. They asked if I could give them an update, you know, on space. And I said, "Yeah, I'll do that." I asked John, I said, "Hey, John, Wednesday night, 7:00, you got a free time, an hour or so, and we'll go there?" He agreed.

At that time he wasn't that very known, so he called me and said, "I'm going to be a little late." And I said, "Okay." And so I started the meeting off. I said, "I got a friend John. He comes from the Langley [Research] Center [Hampton, Virginia]. An engineer." And let it go as such. Then when John came up, I said, "Here is my friend John." And then I got a little devious about it, and we were talking about space, and I had explained to them that if we reenter in the wrong way we would skip off the Earth's atmosphere and we'd never see the astronaut again. And I said, "Now, if that happens, should we cancel the space program?" And one young fellow said, he looked at us and he says, "No, why would you do that? Take another one. You've got seven of them, don't you?" So I looked at John and I said, "I wouldn't know how one of the seven would really feel about it. So let me ask John, because he happens to be one of the seven." You know, it became hilarious. Finally we were supposed to go and be there between 7:00 and 8:30, and so when we got out of there it was close to midnight.

HARWOOD: How did he say he felt about that? What did he tell them he felt about that?

WENDT: No, he said that, "This is a chance that you take, but you try to avoid taking it." In other words, I mean—you try to get away all the things that could leave you in that predicament. And by the way, the boy, when he found out John was one of the seven, he said, "Oh, oh, where's a hole I can climb into?"

But this is again, you know, John was very, very much people oriented. I mean, he was great as a matter of fact. He had a patience that I wouldn't have had. We were having dinner, his family and [M.] Scott Carpenter and so on, at the Holiday Inn at that time, and a fellow came up to him and shot the—during the dinner shot a picture and said, "Hey, sign this" you know. And I was going to tell the fellow what he could do with the picture. But John says , "Okay," and he signed it. I said, "John, I think I could have told him what he can

do with the picture." He says, "Guenter," he says, "that goes with the job." So he was always that way that oriented. And it was interesting to work with him. He went sometimes farther than the other astronauts who thought that time was precious and you have to use every minute of it for whatever comes along. But not John.

HARWOOD: Well, as pad—as pad leader—

WENDT: Okay, we had—

HARWOOD: —in charge of pad operations, I'm curious, because this is a job that no one had done before.

WENDT: No.

HARWOOD: It didn't exist before, to be responsible for launching humans into space. So how did you kind of create your own job description?

WENDT: Okay, now we—it was really interesting. To begin with, when we were sitting at McDonnell and so on, we said, "Okay, now officially what do we call that position?" Now it started off as pad manager. No, manager didn't fit into the McDonnell organization. Okay, "Then let's call it a pad director." NASA said (it wasn't NASA at the time), I mean, they said, "Okay, we can't have a director because that doesn't fit in our organization." So we had to come up with—we kicked all kinds of names around until finally I think I came up and said, "Okay, why don't we just call it the lead personnel?" We called it the pad leader. So that's how the name was created, because it was a unique position. If you understand, here is a civilian employee, I worked for McDonnell. I had people working for me: I had a

NASA inspector. I had Air Force technicians as suit technicians. I had a NASA astronaut as a backup man, you know. And sometimes I had a NASA technician or somebody else. So I had really different categories. But I still was in charge of the whole thing. So that was a unique position that we created. And for that purpose, it worked out great. Because at the same time, later on, I was always accused that I worked for NASA because—and Rockwell only paid me.

But, see you can't look at a badge. If you have a job to do, you have to go with what the job requires, not what some organizational element will put on paper as being it. Essentially I knew one boss, and that was the test conductor, okay? If anything went wrong, you know, the test conductor wanted me to know it and he would make the decision. I could tell him what it is. I would tell him what my recommendations were. But the final decision was the test conductor. And at some time it was a McDonnell guy, in the early stages of test, you know. Then later on when we got to integrated tests, then it became the NASA guy. So that's how we operated. And you're really, in that type of a position. You don't have any [telephone rings] Oh oh. Excuse me. Can you cut this thing?

HARWOOD: You were just going to tell me a story. Go ahead.

WENDT: Okay. We were talking about—one being dictatorial or having a joke or things like that. But you have to realize, and it was actually later on the flying psychiatrist told us that, you have to be able to laugh at yourself every once in a while or you'll go off on the deep end. Because 10-, 12-, 14-hour workdays were the norm in the early stages of the game. Like at one time I went 7 weeks without a day off. So you had to be able to laugh at yourself or make a joke. And at other times there was no room for that. So you had to have a good dividing line.

HARWOOD: What were some of your favorite jokes from the Mercury—Let's kind of go through program by program, and I'm going to ask you a few things about the program itself. But let's start on the lighter side of Mercury. What were some of your favorite funny things that you all did to kind of lighten the serious mood of what you were doing?

WENDT: You tried all kinds of different things, you know, in the early stages. Oh as a matter of fact, one of my very favorite ones, which I like very much, is: Because as a sideline where I was located on the launch pad and so on, I always was elected to escort VIPs and other people around. And you run into all kinds of people. And some of my not-so-favorite people used to be politicians.

So here we were in the early stages, and we were launching Ham and Enos [chimpanzees]. And I wound up with—We were in Hangar S at the time where the Air Force was controlling the chimps. And here comes what I thought of as a little bit obnoxious congressman and he said, "I want to see the apes." I said, "Okay. They are not really apes, but we'll see if you can get there." So I got down then and I talked to the handlers, an Air Force captain (I forgot his name) and he said, "Oh, you know, Enos just came back from a training session and he is pretty much ticked off. And Ham just went into it. So I'm not sure." And he says, "You know what Enos does." I said, "Ja, I know what he does. But I got somebody who wants to see him." So he says, "I would rather not." I said, "Okay." Then I go out and I says, "Congressman," I said, "We only got one chimp right now that came out of training and he is—his disposition isn't that great. I'd rather have not that you go in." He says, "Oh, you are telling me that I can't see the apes." I said, "No, sir, I'm not telling you, you can't see the apes. But sometimes it might be better not to do that." He says, "I'm a congressman. If I want to do that, I'd like to do that." I said, "Okay, go ahead, sir."

So he went in and I kind of had an indication of what was going to happen. So he went ahead of us and, knowing Enos, he was on the left-hand side in the cage. He saw us coming and he thought he was going to be put back in training, which he didn't like. So he hunched down and deposited something in his hand. And he hit that guy from 15 feet square on the chest! And was dripping down on this nice white shirt and tie, and he looked at me and says, "Oh. I guess I know now why you didn't want me to go in." I said, "Sir, I didn't know that was going to happen, but you know these are unpredictable animals." So these are the lighter moments, you know, when you can sometimes get to these people—

HARWOOD: So you were secretly laughing about that.

WENDT: Oh most certainly. I mean, I thought it was going to come—and I thought, "Hunh, there's one of those guys that won't take No for an answer. We'll really let him have it."

HARWOOD: Now what about some of the jokes that you and the Mercury astronauts would play on each other.

WENDT: Oh now, there were always things. Like [Alan B.] Shepard [Jr.] was a great guy. Like he didn't—he disliked Public Relations people. So once there was a big photo session or a camera session set up in the crew quarters. And so what he had done is: At that time—they were old buildings. They had to use old screw-type fuses in the electrical circuits. So he got cardboard washers and put them all over the screw-type fuses. Needless to say, when all the people came up to do their camera interviews and so on, none of the electrical circuits worked. But he did that.

And then the other famous story was Dee [Delores B.] O'Hara, who was our nurse there, having a problem with Wally [Walter M. Schirra, Jr.] getting urine samples from

Wally. And she complained to Deke [Donald K. Slayton], so he heard about it. And what Wally did was, he got a big 5-gallon water jug and filled it with tea, put a little detergent in it, made it foam, and then set it on Dee O'Hara's desk as "Wally's sample," you know, in the morning. So we always had little things that we would do for each other. And Shepard was great for that, too.

I mean, one time we were on the pad and he was there. And Gus [Virgil I. Grissom] was there. And Walt [Walter C.] Williams was the chief engineer for NASA at that time. And he got a call, "You need to go to Cocoa Beach for a press conference." But he didn't have a car. So he said, "Oh man, I need to get to Cocoa Beach." So Shepard says, "Oh, heck, take my Corvette." You know, the astronauts all owned great Corvettes. And he had one and Grissom had one. He said, "I'll ride with Grissom," you know. And Walt said, "Oh, you don't mind?" "No, no." So sure enough, he give him the keys and then Walt jumped off. And the next thing that I notice is, here goes Shepard to the window and watched Walt take off. Picks up the phone, calls Security, he says, "Some SOB [son of a bitch] just took my gray Corvette. He's heading for the South Gate." Walt Williams showed up at the South Gate and there were four guards. They didn't even ask the question. They lifted out of the Corvette, slammed him against the wall. And they didn't talk to each other for 4 weeks.

These were some of the neater things you did. You know, you had to make do with lots of things. Some of them were funny. Some other times, like I mentioned the long hours. McDonnell was very good for us, I mean, in the management people. We could do lots of things. Like I could buy things with petty cash if I needed it. And so one evening we were still testing, and we had about another hour to go and the troops got restless in the blockhouse. You know, they hadn't eaten or anything like that since lunch. But if I powered down, we would lose at least 6 or 8 hours' time. Because if you powered down, the guy I chop off, it takes them 2 hours to get back your power up, and another 2 hours. So I asked them if they could do—make do with ham-and-cheese sandwiches and coffee. They said,

"Yeah, do that." So I called Ramon's and I ordered 100 ham-and-cheese sandwiches and two urns of coffee to be delivered to the South Gate. Then I asked my tech supervisor there, I said, "Hey, can you send somebody to the South Gate to pick up the stuff?" So we were doing that and within 1 hour we were finished. And I paid out of petty cash for—for the ham and cheese and things like that. Later on, I mean, Apollo later on I couldn't do that anymore because they wouldn't allow you to spend petty cash like that. I could—it was neat.

If I needed a guy and he was in a carpool, I could offer him a taxi, you know, and say, "I'll pay you 4 hours' overtime." Because, you know, you need key people. And we did lots of things that were not maybe in the rulebooks, but you expedited what you needed to do. The same way you would call Boeing [Company] or you would call [Glenn L.] Martin [Company] and says , "Hey, I need 20 AN_4 fittings. Do we have any on hand?" The guy would go, "Ja, I've got a whole box full. Come and get them. And you know, by the way, you've got half a sheet of stainless steel?" "Ja, we got some." So I said, "Hey, have some stainless." You know, or if I didn't have anything he still would give me the fittings. And we didn't have any paperwork or anything like that.

See at that time—and that's what deteriorated later especially, you know, today—your word was good as gold. Whenever you promised something, you delivered. You didn't need 15 pieces of paper or 20 signatures. And that was really the success of the early program. Everyone—you didn't care what kind of a badge you had. Somebody needed something, you had it, you gave it to him.

HARWOOD: Well, one of the things that George [F.] Page said to me was, "You know, Guenter has this reputation of being such a tough guy." He said, "But my feeling always was that if I was the test director and Guenter was in charge of the pad, I rest assured knowing everything was going to be done right. And that if he told me things were go, he meant it."

Which I guess plays on what you were just talking about. I mean, that sense of—that fine line between Guenter the dictator and your word counts for something.

WENDT: Right. In other words, you can—I mean, in this situation, you cannot lie to people. You cannot give them a bunch of baloney. But they'll let you say, "Hey, I know" or "I do not know." And there's nothing wrong with saying "I do not know." You say, "I need to find out." But they knew if I said, "Yes, you're ready to go," they knew it was ready to go. But at the same time if somebody was going to fake it, you wouldn't tolerate it. In other words, at one time I had another contractor who, in front of a whole bunch of people, told me that the contractor was a government employee. And he said, "All you guys are out to screw the government." And I said, "Now, if that was a joke it was a very bad one. And if that's your attitude," I said, "I don't need you on the pad. I'll have you replaced." He said, "You can't replace me. I'm a government employee." Little did he know that I had the reputation of knowing quite a few people who knew me. Within 15 minutes, he had left the pad and never came back. But in other words, you know, you have to maintain your reputation. You cannot jeopardize it. And whatever it takes, you have to deliver.

So in other words, I was very, very conscientious of that. And so were other people. If I went to the test supervisor—to the tech supervisor, I says , "Jim, can you do that in 2 hours?" He said, "Man, give me 2½." I said, "Okay, 2½ you'll make it?" He said, "I'll make it." He got it. In 2½ hours. He may have killed himself, you know, but it was there. And see, this is where you base your confidence on. In other words, like when I talk to the test conductor. He isn't there. He doesn't see what goes on. I am his eyes. And if I give him a phony story, the system won't work. So in other words, he has to rely on it, that whatever it is, is true. In other words, before a test, hours before that, I would go up, I would look through all the books and so on, "Did we all complete this?" The other guy says, "Oh, that is done." I said, "If it was done, why do I not see a stamp there?" Because in other

words, you know, you can't go halfway. It either is or is not. And sometimes that gets in the hair of some people.

As a matter of fact at one time, also on Mercury, we had a problem and we were very short on time. And the electrical engineering manager, Bruce, he was going to go ahead and take two wires and test into a plug. And I wouldn't let him do that because the same plug—it was a 54-connector plug—had the squibs in which fire the drogue chutes and so on. So I told him, I says , "The only way I'll let you do is that by making me a companion plug with pigtails. We check it out. If it checks out—" He said, "But that takes 4 hours." I said, "The longer you talk, the longer it takes." And so he went to John Yardley, and Yardley called me in and he says, "What's the story on that?" I said, "John, over my dead body." He says, "I won't let him do it." And John called. He says, "Who in the hell works for whom?" I said, "John, you know who works for whom." But he says, "The longer you talk—" And John says, "Okay, we'll make a pigtail, you know." So later on when John came up, he says, "You know, I could have saved me a lot of time. I shouldn't have even called you. I knew what the result would come in to be."

But see, there are certain things you let happen and certain things you cannot let happen. You have to have a line where you say, "Okay, that's it." That was also the reason, see, after the Gemini Program, most of the astronauts said, "Okay, we'd like you to come over to Apollo." Now see, Apollo was built by North American at that time. McDonnell didn't have Apollo because we had finished Gemini. So I talked to the managers at North American. I said, "Okay. Now you need to understand I have complete control over the people that work for me. I have the hiring and firing authority. And I report to the base manager." "No, we can't do that with a new hire, you know." I said, "Okay. Since that's the only way I knew how to do my job, and it has worked well for two programs, I cannot see making any change." So I say, "You don't need me." So then I stayed with McDonnell and

came to Titusville. And actually I opened a gun range for testing anti-tank missiles here in Titusville (because of the [Vietnam] war at the time). That was until after the [Apollo 1] fire.

Now the fire took me very hard because, when you know the individuals, you know you have horsed around with them, and they're your friends. And so then a couple of days later I got a call from Slayton, and he said, "Hey, you know, we really need some help. So come on over and work with North American." I said, "Hey, Deke, no going. Because I can't do my job the way I'm used to." He said, "Oh I got somebody who says you can." I says , "Put him on." The guy got on the phone, a Mr. [William D.] Bergen, and, "I can assure you can have whatever you need." I didn't know who the heck Bergen was. So I talked then to [Harvey] Pierce and to [Joseph A.] Moore and we agreed, "Ja, that's—I need to revamp the system there." Because—okay, let's not go into detail with what was wrong. And so then I said, "Oh by the way, who in the heck is in Bergen? You know, the guy I talked to a couple of nights ago?" And there was a picture organization chart and there on top was one that says, "Bergen, President of North American."

So then I knew why I could get more what I needed. So then I started over on the Apollo Program. And I made some changes because, you know, when you have something that works well for you, why would you want to change it?

HARWOOD: You said the fire upset you. Did you have that sense of that you wish you'd gone, that you wish you'd already been there? Or do you think you could've even made any difference?

WENDT: You know that's a question that I was rather frequently asked, you know, "Would you have prevented it?" And I always refused to answer that question because it would be strictly conjecture—okay? So later on, I thought in a way it was unique—Somebody was looking out for me. Because if I had been there and it happened to me, it would have been

very, very devastating, okay? So I was spared that having been in charge of it. See, later on when it happened again with the *Challenger* [STS-51L], I mean I was not involved directly, even though I was on the Safety Board at that time for Mac—for Rockwell. And I was primarily responsible for flight crew safety. There was nothing wrong with the Orbiter. See? So that was again, it did not fall in my area of responsibility. Because that's when it really gets to you. If you have no control over it, there's not much you can do. And you—it's a little easier to take, let's put it that way. So somebody was looking out for me.

HARWOOD: Let's go back to Mercury for a minute. Give me a sense of what your crew's responsibilities were. I mean, you know, let's say maybe on launch day. And let's take each program that you worked on. You know, what did you all do on launch day? And what were your responsibilities?

WENDT: Now Mercury wasn't as complicated, so to speak, as later on Gemini and Apollo. Now what you had to do before you launched it: First thing, once—we'll go through the steps a little bit. You put your spacecraft on top of the rocket, okay? Now you have to hook up all the connectors that interface with the rocket itself. Then you have to prove that all the wiring and the umbilicals (see, your headline now is an umbilical) that all these circuits in there work. Then each system engineer wants to make sure his system is still working, be it communication system, oxygen system, environmental control system, the guidance system, and so on. Each one needs to test it. Now the problem is, each one wants to do it at the same time. That doesn't work. You now have to go ahead and play traffic cop and says, "Okay, you can do your job at that time slot after we are powered up. And you can do yours at that time. And you have to hold up the set. However, I need these people to monitor this." See, that's where it gets in where you prepare everything. Then before launch, you get now—

In Mercury, it wasn't that critical because they didn't have much in the line of food provisioning or things like that. But you had to load the oxygen on board. You know, you had to load the peroxide (hydrogen peroxide), which, by the way, was a big problem on John Glenn's flight because we had to scrub a couple of times. And then you have to see that all the pressure systems work correctly. And that you can integrate it with the launch count, with the other activities that the launch vehicle has to do. Take for instance, you do have to check the command destruct system, which destroys the rocket. But you want to make sure it doesn't do it while you're sitting on the pad. So you have simulators and that. Then after that, you have to hook the connectors up. Now you have to verify that the connectors are hooked up correctly. So there are lots and lots of things that you have to do in order to verify that everything works correctly.

So that was what we had to do. And sometimes it takes hours and hours on end to do that. As a matter of fact, we always had a little joke, you know. In John's flight, although we had a periscope in the Mercury, and laying on your back for hours on end is not the most comfortable thing. So one time the doctors in the blockhouse, now (the aeromed facilities) were always our enemies, because they always came up with some requirements and, you know, they wanted to poke the astronaut one more time, need some more blood, need some more urine, and bring back all the samples, you know, that you discharged). So all of a sudden they said that John's heart rate and breathing rate had gone up, and they didn't have an explanation for that. And John said he was perfectly all right. You see, never did we tell the blockhouse that one of our techs had held the centerfold of *Playboy* magazine in front of the periscope. So that was one of the cute things. Another one was—

HARWOOD: I would've thought John Glenn wouldn't react to that. He was such a, you know, a good—

WENDT: But it was so unusual to see that, you know. Then the other time is, we had a very famous German restaurant in Cocoa Beach which served really good German food. So one day we were in the spacecraft and we were testing it, and Scott Carpenter was in. Now you need to understand the old suit system. I mean, to begin with, all the suits were set up to fly in space at 5 psia, absolute pressure, you know, and 100% oxygen. So they had a recirculating system in the suit where the air would recirculate, go through a scrubber, you know, it would take the carbon monoxide out and so on and so on. And here was Scott. It was several hours in it. And the next thing you hear on the headset, "Ohhh." Oops! something is wrong, you know? A minute later he goes like, "Oohh." And by that time I could see the doctors climbing up on their chairs, you know. "Scott, what is wrong?" "Ohhh." One more time and they became unglued and wanted to stop the count. They said, "Scott, tell us what is wrong?" He said, "Okay, if you really want to know." He said, "That's the last time I go to that German restaurant and have knockwurst, sauerkraut, and beer." And I'll leave it to your imagination what happened in his suit. But it was set so every couple of minutes the whole thing would come back to him, whatever was in the suit.

HARWOOD: Oh what fun.

WENDT: Well, it was—Well, we had some lighter moments there, let's say though.

HARWOOD: Now when you know on closeout, you talked about all the things you did to get ready for closeout. You know, one of the things was getting the astronaut into the Mercury capsule and knowing that your—the last person, maybe, that they're going to see. Tell me about that process and when you would leave the pad—how long were they out there by themselves? I mean—

WENDT: Okay. Now essentially what happens is: Before the astronaut gets in, you have the suit technician go in and arrange all the cables, the straps, the restraint system, the hoses, so that nothing gets damaged—especially in Mercury when the astronaut gets in, because it was a pretty tight fit. We always used to show—say, "We get the astronaut in with a shoehorn and we get him out with a can opener." Because there was very, very tight places. So once we had everything arranged and the astronaut would get in, I asked the test conductor, "Are you ready for crew ingress?" That's what we normally used to call it. He'd give us a go that everything was—In other words, he'd didn't know of nothing wrong with the booster, nothing wrong with the other people, nothing wrong with the range, nothing wrong with the ground support equipment. He would give us a go for insertion. So then we'd would put the astronaut in. The suit tech would hook up all the hoses and restraint systems, the comm [communication] system, and so on. So then the next thing is, you do a comm check, see that the communications work. The environmental people looked at the flow, the air flow is correct. And so on.

If everything is great, nothing has changed, no big problem, then I asked permission to go ahead and close the hatch. Once I got a go to close the hatch, I normally would lean in and I say—Now you need to understand communications are limited because he has the big bubble on. So I would normally go in and say, "Okay, are you happy with everything that is? You know, you'll have to give me a little thumbs-up." Or he would say, "Yes, yes, okay." If he said he was okay, one look around that we remove anything like safety pins laid on in Gemini and so on, everything looks okay, then I would tell the techs, "Okay, put the hatch on." Then we put the hatch on. The next thing we need to do is to run a cabin pressure check, a leak check. If that turns out all right, then we are now ready to go. And about—normally about an hour before liftoff, we would clear out the white room, leave it, you know, and then we would leave. In other words, now in the structure would go back, the last range support function would come in by phone, and then we had a liftoff.

HARWOOD: Where would you watch the launch from?

WENDT: We would go to a very forward position, what we called the roadblock, where the crew—I had always an emergency crew that in case we need to go in a hurry we would stay there right at the roadblock. I also had my electrical technicians, the mechanical technicians, and the system guys that were at the last minute to be available. We had them there at the roadblock, because everybody else would be cleared. So we would be watching it from the roadblock.

HARWOOD: And right there. Now, during that time, I mean, you've talked about how you were a stickler for doing things right. But let's face it: The rules were very different. I mean, I've heard stories of, you know, you just walk through clouds of toxic fume, and—give me a sense of that. Of how different it was compared to do today where, you know, you can't move without, you know, these regulations being followed and these safety—. I mean, give me a sense of that and your feelings about the changes.

WENDT: Now you've got to understand: There were lots of things we did not know. You know, in other words, the fill system, for instance, on the Redstone rocket was: You filled it until it ran out from the overflow on a tub—on a pipe which was just dumping it right on the pad. And later on we learned that oxygen and tar don't work together too well, you know. But we still did it that way, but except we took the tar out and put some—they put silicone in. So you learned a great deal. But we did all the fine arguments. We'd say, "Hey, anybody on the pad. Don't smoke for the next 4 hours because the oxygen saturates your clothes and polyester clothes goes up in flames." So, you learned as you went along.

And a lot of safety precautions that you took. Like for instance: When we learned that in Huntsville a very, very nice, orderly technician had gotten some of the squibs (the squibs are initiators that electrically initiate a pyrotechnic charge—to blow a rocket) and he had some of the squibs in his hand and he saw a big power cable laying on the ground there which looked pretty messy. So he curled it up nicely. And when he had curled it up nicely, the squibs in his hand went off. Why? Because he had created a electromagnetic coil; it was 400 cycles at that time. And it blew up. So now we found out that you could blow up squibs rather easily with electromagnetic actions.

HARWOOD: What happened to his hand?

WENDT: It wasn't burned. I mean, it was just slightly burned. But now we learned that you have to have what we called 1 Amp, no fire squibs. So okay, you change the squibs. And, see, as you go along, you learn a great deal about it. And it's an evolving process. Now—

HARWOOD: What do you think about how strict things are now?

WENDT: Now, actually, things were stricter a little bit in the beginning. Now you need to understand the Air Force was very strict with their rules and regulations. You don't bend anything on the Air Force side, even though some of them were ridiculous. But again, you know how that goes sometimes. Then later on, when we learned a thing, we made our own rules, and especially with hypergolics. Now here again there used to be the famous red clouds around the nitrogen truck site. Now we didn't think it was that bad. You know, it gave you a sour taste on your tongue and so on. But frequently on the Gemini pad our white room was enclosed in a big, old red cloud. Now it wasn't that bad until we found out if you parked a car close by or if the Security came up and they walked through the clouds, all their

badges turned black and the bumpers turned black on the cars. So we found that that might not be too good to breathe that stuff. So—but we had to learn all these things. As a matter of fact, when you talk about Scheflette, I remember Scheflette, when we used the peroxide systems. You always could tell the people that worked on the peroxide systems, because they always had white hair in front, even being 20 years old. Because hydrogen peroxide does something like that. So it gets hairy.

When I mentioned peroxide, for instance, when we scrubbed one of John's launch, it was rather interesting. We had loaded the peroxide system. And the fellow on the ground support equipment said, "Ja, I got the whole weight of the peroxide system in the spacecraft." But the guy that controlled the gauges on the spacecraft says , "I don't see anything in my spacecraft. You didn't pump it up." The guy says, "Yeah, but I mean the scales tell me it has gone up there. Where is it?" Now we had a horrible thought. It hadn't gone in the spacecraft. It had gone between the spacecraft and the heatshield, and it was sloshing around in there. There was a leak.

Now peroxide—92% peroxide—is looking for a hydrocarbon to go in what they call "instant combustion." So now what do we do? Okay, you set sail or you sink. Now if you shake it well, it blows up. So we cleared all the pad first, and then what we decided is: I got the engineer who knew the bellybutton—what do you call it?—the belly band and so on. A long story short. What we had to do is to take that spacecraft off the Atlas rocket, very carefully lift it over the side, get the fire department arranged around the pad. I said now, when we come down, 5 feet above the ground, we had a string we would pull the—We had dropped the heatshield. You know they had a heatshield would drop 4 feet. And you spray water like hell, you know, to dilute it. But we didn't know what would happen, so we very carefully demated it and then got it over on the side and dropped it down. And then we pulled the cord and then waited a while and then nothing happened. But see, these are the things you learned. As a matter of fact, before we even launched Ham on the Redstone pad,

we had a 2-inch liftoff and it set back down. You know that famous thing. And then the parachute came out and all this jazz happened. So then—

We were at the roadblock at that time, and I got a call from the blockhouse. And he says, "Okay, we'd like to have"—. Oh, first thing was Dr. Debus was going to go ahead and have pad safety shoot holes in the rocket because the rockets wouldn't vent. You know, we're talking about the big pressure, the oxygen vent was closed, and he was going to shoot holes in it. Now Yardley objected to it because he said, "I've got a good spacecraft here. If you blow it up, I'll lose a good spacecraft." So then, what do we do next? Yardley then had a fellow, a ground supporter, a fellow by the name of Schocke, and he was a mechanic. Now he had to go into the tail end of the Redstone rocket, sitting there pressurized, hook up a quarter inch GN_2 line, and then open a hand wire just so that it would open, but not too much. Because it would trigger the relief valve up there. And then run like hell back to the blockhouse! And just before he made the corner—it relieved the pressure out there, a big old shot of oxygen—gas came out. So now we had to think, at least we had it depressurized.

But now we found out that in the spacecraft itself there was what we call an .05G switch; that is, a switch that when it detected the Earth's atmosphere at a certain pressure, it would fire the retrorockets. Now the retrorockets were sitting right above the alcohol tank on the Redstone. Now we couldn't have that happen though. The trouble was, don't hit the spacecraft with anything. So Yardley asked, "We're looking for some volunteers that were single, had no dependents, and would volunteer to go out, open the umbilical which had closed, and put four jumper cables in." Except to open the umbilical, you had to blow out some rivets to do that. Long story short: The spacecraft manager, Bob Graham, the tech supervisor, Jimmy Jones, and myself, we volunteered to go up there and do the void. Now what's interesting: By that time, pad safety had come and put all kinds of cameras there. And I said, "Now what the hell good do these cameras do?" They said, "Oh we can't do

anything for you, but at least we will see what happens when it happens." A real good thought.

HARWOOD: So that was all to save the spacecraft?

WENDT: All to save the spacecraft. So we went up there. They had brought the structure back in place, so we went up there and very carefully drilled out the rivets, and then very carefully inserted the pins, and then when the blockhouse said, "Okay, .05G is saved." You know. Then we still had another problem with some switches that we had to open the hatch. And it was funny: All the screws were matched to a particular hole. And I never forget the fellow that used to match these, you know, was very particular about it where they would go. He had a cardboard box where he stuck all the screws. And we just took the screws out and pitched them in the corner. I said, "Oh that guy's going to kill us when he finds out what we did to his screws!" But anyhow, we opened the hatch and then, cluck-cluck, four switches, and now we were saved. But—

HARWOOD: It's amazing.

WENDT: —this is how we used to do this.

HARWOOD: That's amazing. How are we on time on our tape?—We've got 5 minutes? Should we switch? I hate to get him started on a—

VOICE OFF CAMERA: Okay. We'll stop now.

HARWOOD: I was going to say, though—

VOICE OFF CAMERA: Speed.

HARWOOD: Okay. Now in terms of some of the behind-the-scenes safety stories of Mercury, tell me about the story of the role that pigs actually played in making the Mercury capsule safe for the astronauts.

WENDT: Now, before we ever got a spacecraft I had to travel back and forth sometimes from here to St. Louis. And one day I walked through the hangars, where they were building the spacecraft, and I got a strong odor of like a pigpen somewhere. So I said, "Now that couldn't happen." I mean, in an aircraft factory you don't have pigs. I mean, even if they serve it in a cafeteria they wouldn't grow their own pigs or things like that. But lo and behold! there in one corner of the building, there was a pigpen. There were several pigs in it. So needless to say, the next question was, "What in the heck are we doing with pigs?" And then I found a project engineer who explained what pigs were for.

See, we had to worry about that if Mercury spacecraft would land on land, how much of an impact would the astronaut experience landing on land? So in order to do that, we had to do some drop tests, because we put crushable honeycomb material underneath the couch (the molded couch), but you wouldn't want to do that with astronauts because that could be detrimental. So then the powers-to-be found out that the intestinals and the inside makeup of pigs was very similar to that of a human being; like kidney, liver, lungs, and so on. So what they would do is make a couch for pigs, then hoist them up on a rather tall facility, and drop them and see what happened to the crushable material. How little they could, you know—Weight was always a problem. And some of the tests went very well. Some of them didn't go too well. But then whatever was left over went to the orphanage in St. Louis. You know, we had a place where they liked to have pork once in a while.

HARWOOD: So they ate the pigs.

WENDT: They ate the pig, right. But these are some of the things that show you as to how tests had to be done because you didn't know. So you had to have to find out how to do things.

HARWOOD: In your pad closeout operations, when you went from Mercury to Gemini, and all of a sudden you had—you weren't just dealing with one astronaut: Tell me about the changes that prompted, and how was the closeout process any different for Gemini?

WENDT: Now Gemini was quite a bit different in that, to begin with, we needed quite a few more people up there. Because now instead of an escape rocket, we had ejection seats. Now ejection seats are pretty nice things. They had been used in aircraft and things like that. But also, like each ejection seat had about seven safety pins in it, because they were fired by pyrotechnic charges. The doors had to open and so on. So that was a little bit more work. Now also then Gemini was quite a bit larger, and now we were also faced with the fact that we had to stow food supplies and things like that in the confined spaces because the missions were getting longer and longer.

But one of the biggest things was also that we now were faced with the fact that, due to the makeup of the thing, that we had to go and put the crew in while the flight vehicle was already flight-pressurized. Now where in Mercury we had oxygen and kerosene or oxygen and alcohol, here we had hypergolic fluids which by its very nature are relatively poisonous even as gases. So you had to worry about a what happened if again. And now you are stuck with a structure which had one rickety elevator which used to quit about once in a while. And if that thing quit, then you had a long ladder to climb up on the outside. So things were

not that great. So, start off with—We thought we needed to have some other means of getting off the pad if things would go really bad, so we started off with designing a slide-wire system. There was a NASA fellow by the name of Buck Blevins and myself, we solicited information from oil derricks and things like that, "How do you get your people off if you catch fire?" So then we made different experiment. And finally we wound up with two slide wires which could accommodate as many as 45 people, where we had enough room for that. And we did that. So now we had a slide-wire system.

Now then to get to the two crewmen, needless to say, we needed to have more time to prepare the spacecraft for that. We had to have more time to spare—to store the, what we called, consumables. And it took quite a few more people. I had, as a matter of fact, even after the flight vehicle was pressurized, I had as many as 40 people up on the three levels; we had three levels in the white room there. So it was getting more involved in it. And again, it left us, too, some of our little inside jokes that we had.

For instance: Since the astronauts always had to return their excrement for the medical people to examine, they would go and might neatly rolled it up in packages and put it in a container that previously held food. And I always used to talk. I'm going—I told Pete [Charles C.] Conrad [Jr.] one time, I said, "You know, if you go for a midnight snack, squeeze the devil. If it's soft, put it back. You don't want it." So we had quite a few things that you had to worry about, you know, in this spacecraft.

But it was a little bit more complicated. Now, let me also give you another idea. A lot of people ask the question, "Were the astronauts nervous when they were put in the spacecraft?" And the answer is, "No, they were not." As a matter of fact, Pete Conrad and even [L.] Gordon Cooper [Jr.] went to sleep on me one time in the spacecraft. And the best explanation is like this: If you prepare for your biggest vacation trip you ever made, you're going to fly to, let's say, Australia and so on. You worry about the day of the flight. Is the alarm clock going to go off? Is the car going to have a flat tire? Will the car get you to

the airport? Will the airplane be on time? Will I make a connection? But once you're on the final airplane, you go back and you say, "Ahhh, got it made." See, and that's about the same as these guys. They have been through so many tests, so many dry runs, so many activities, that finally they say, "Oh man, just close the hatch and let it go." You know. So that's essentially the feeling. They were not careless or anything. They knew what they were getting into. But they had practiced it so many times, they knew what to expect. So once you know, then you just take it from there.

HARWOOD: And so they weren't nervous?

WENDT: They weren't nervous, no.

HARWOOD: The slide-wire basket, you know I've heard so many infamous stories about the testing of that. You know, tell me some of your favorite stories about testing that. And also, I'd heard that you even—you know, your fear was that if there was a problem, that someone among these 40 people that you had to get off the pad would panic and maybe jeopardize the lives of the others because of the panic reaction.

WENDT: When we started with the slide wire, you've got to understand, we didn't have baskets in the beginning. I mean, we had hoops and all kinds of things. And one of the slide-wire gadgets we had was from the oil rig—from the oil company. A slide wire they had, as a matter of fact, a brake on it that you could brake the speed of it. And while we were testing it, one of our fellows, he jumped off at about 15/20 feet from the tower, he pulled the brake, and he wouldn't release. Here is a guy hanging 100 feet above the ground, 20 feet from the tower, and he wouldn't let go of the brake! So what the heck you going to do? So now we had to improvise again. So what happened is: I had our technicians put a rope

around me. I put a harness on, and then they lowered me down to the guy, and I grabbed him, and I took his hand off the brake. And now our guys had to pull the two guys back up on the tower. So that's—we figured a brake was not the real system to use.

So then the other thing was that became—Once we had the system somewhat to form, the very first time I went down the only bad thing was that the guys might—the techs and so on were taking bets that if I would bounce off the end of the slide wire. We had a trampoline set up vertically, and—but I fooled them. I stuck my heels in and ground the heels off my shoes, but I didn't bounce off. So then it became more or less, some people said, "Oh, it's a fun ride." And especially some of the astronauts, when they came out, you know.

Shepard came out and Grissom and Cooper, and they came out with the pad safety guy, and they just grabbed one of those things and just went over the side. And pad safety said, "But you can't do that." And Grissom said, "Ja, I understand, but, I mean, I'm going to check that." And then Cooper says, "Hey, I'm going to go and tell him." So he went after that. So the safety guy looked at me and says, "You guys aren't supposed to do that!" I said, "I'll tell you what. I'll go and tell them about that." So I went after them! So all we went down. But then we had a near-miss. One night, you know, on second shift and so on, the guys thought it was fun to ride the slide wire. But by the way, a slide wire was, when you stepped off, the first 20 or 30 feet you went just about vertically, you know, and "oops!" I mean—

HARWOOD: You had a harness on, right?

WENDT: If you stumbled—

HARWOOD: You had a harness you'd hook on, and—

WENDT: Right. And then some dumb person had parked a forklift underneath the slide wire, and two guys just about, within a few inches, cleared them when they came down. Well then in our nice, unique way, I made another rule: that anybody using the slide wire without the need for it could just pick up his last paycheck, because he would no longer work for us. So you see, that's—you have pros and cons. You have to worry about it and yet have fun. Now that whole system, we put in for about $10,000/$12,000 because we scrounged most of the material or we had it donated one way or another.

But then later on, when we went to Apollo from there, I think the slide-wire system became a $1M project. And we then had a cable car which held nine people. And see the—the deal was, the closeout crew, including myself were six people, then we had three astronauts, so we had nine. And that was pretty great except now we had a problem: What happened if one of them would panic? Let's say we have a fire at the tail end of the booster and he would panic, he'd jump in the car and take off. The other eight would be stranded up there.

Now on Apollo we did have a blast room down below, you know, and so on. But I once asked the helicopters, I said, "Now, if that happens to us and there's a fire down below that we go up on top of the structure, would you come and get us?" And the major says, "Air Force regulations are: we stay 1400 feet away from you and we can wave at you." So they let you know, and we used to the joke. I always told the flight crew in Apollo, I said, "You know something: Whenever this thing blows up, I fly higher than you do because you are inside. We are outside." You used to joke about it, because, see, on Apollo when you went out there were no people around for 3½ miles! And the Saturn V had the potential power of 8/10s of an atomic bomb! So your chances were relatively slim. Those things wouldn't go too well.

HARWOOD: So were you concerned about panic? I mean, I've heard stories that you—

WENDT: Oh yes—

HARWOOD: —you know, you hid a pipe out there and you'd just conked the person. I mean, is that true? And say, "Okay, sacrifice the panicked person and the rest of us get saved."

WENDT: That was on Gemini, you know, when we had, I mentioned, that one elevator and the slide wire. But access to the slide wire was one inward opening door. And one day I got a call from Yardley. He says, "Mr. [Walter F.] Burke likes to talk to you." Now Mr. Burke was the vice president of McDonnell. He came down from St. Louis. And if you get an invitation like that, it's just like you're driving a highway and a highway patrol car passes. You didn't do anything wrong, but you aren't sure what happened.

So I took off and I talked to Mr. Burke. So he came up and he said, "St. Louis has a story circulating and I need to have verification or clarification on it." I said, "Okay. What's the story?" He said, "The story has it that somewhere on the pad, in the white room, you have a pipe stowed and you would actually kill somebody if you need to, to clear the access of the white room. Is that true or false?" I said, "Walter, if somebody panics and blocks the exit, I have 40 people. I'd gladly sacrifice one if I have to, to get 10, 20, 30 people out of it." I says , "Would you like to see the pipe?" He turned kind of whitish. But he went back to St. Louis. He didn't say a word. Now see—

HARWOOD: Was there really a pipe?

WENDT: Yes. Now see here you have no time to form a committee. You have no time to look at a procedure—What can I do now?—if there's a hell of a fire going and you need to

get out and somebody panics. What I—See, these are the "what-if" games. And it even went farther, like for instance: All the Apollo crews knew our rules were if we are on the pad and we have a Condition Red (now, Condition Red is whereby the booster people or somebody has found a condition, like an overpressurization of a tank which could blow up, which they had no control over, we didn't know when it was going to go) and the deal was, if the flight crew was in and there was no explosion inside the spacecraft, or we assumed that they were ambulatory, we would spend the extra 20 seconds to open the hatch and pull them out. If we had reason to believe that they were not ambulatory, we would leave them in and leave and save ourselves, our six people. Now this was, in discussions, it was put very plain; that's the way we set that. Conversely, if we had something in the spacecraft and I had some of my people knocked out or myself knocked up and some of the fire rescue crew (that was a Pan American crew), they would come out, if they could, if there was no Condition Red. They would step over us to get the astronauts out first, and then they would take us later.

HARWOOD: Well, that—you know, we think—we always are thinking about how the astronauts' families must feel, that they're in that dangerous situation. But how did your own family feel, knowing that you were out there, sitting on top of this atomic bomb?

WENDT: You need to understand, I worked with nothing but volunteers. I mean, anybody on my crew had to volunteer. Besides that, we always tested them for panic situations. We would run them and I would go. We'd go through smoke tunnels. With all of us they had a smoke tunnel, nearby there was a fire, complete darkness, you have a breathing apparatus, and you'd be surprised how many level-headed people all of a sudden panic when they smell smoke and they can't see. They would kick out the panel and get out. As a matter of fact, I had one of my technicians—we had a—.

In the training, we had a little play where you had to climb over something and then you had to change breathing apparatus. In other words, I would disconnect mine and he would let me breathe out of his and vice versa. So I disconnected my breathing and I tapped on the shoulder; it was a signal for him to give me his. And the last thing is—what I heard was, "Get hose." He wouldn't disconnect his air hose. But here I am. Needless to say, he did not make it on the closeout crew. So that—in the same way, the same token, we also found out that we said we needed to have some closing. We always had a worry about a hydrogen fire; you know, because hydrogen is 2% to 92% flammable. So, we hired a guy on our staff that was very well versed with materials and so on. He collaborated with the DuPont Company; and we came up with a fabric called Nomex, which was really flame-retardant, or it didn't even burn. So then we had Nomex clothing made for the closeout crew and so on, which was not comfortable because we had to have long-handled underwear and all that. In the summertime on the pad, I mean. But nevertheless, I mean, by the way if you wonder what race car drivers are wearing these days? Nomex.

HARWOOD: Really?

WENDT: Yes. So see, these are the things that you learn and you find out and you try to, see, make provisions for that.

HARWOOD: But did your family know how dangerous it was?

WENDT: Yes.

HARWOOD: Or did you—? They did.

WENDT: There was no question about it. The same way I always made it a habit of, for each crew that flew in Apollo, I had their families come up and look at the spacecraft before they went. I showed them what it looks like, what it is, so that they had a good idea as to what it is their husbands get into. Now you have to be realistic about it. I mean, this is the thing you volunteer for it, and that goes with it.

HARWOOD: Well let me throw in a question here, just because of something you just said. Their husbands climbing in. In the beginning, it was all men. You had daughters. I mean, how did you think about when the idea of women coming into it and doing that what all the men did in the beginning?

WENDT: Now we didn't have any women in Apollo. See? And as a matter of fact, if you got into it, frequently, you know, when you used to go talk to college students and so on they always said, "Why don't we have women?" And one of the things was in the Gemini and Apollo Program and so on, it was one problem we had. We could not, engineering wise, design a urine collection system for women. But the Russians did. They used on their females, they used catheters. And if you will recall some of the missions, they had to bring them back the next day because they got infections.

So we did not have a urine collection system that was usable until we had the facilities now that you have in the Shuttle. But again, it's a little sideline: Very interesting when you talked about engineering tests. In order to develop the system, I went to Downey [California], which was the home plant at that time, and I watched a engineering evaluation where they tried to come up with a urine collection system for females. And what they had done, they had hired some female stewardesses, which you never saw, painted numbers on their legs. They then had them urinate and see which way things would be going. Now

when you saw the film, and they go like "chut-chut-chut-chut-chut," you know there was no way in heck you could come up with a collection system of that nature. So—

HARWOOD: So that—

WENDT: —these are all engineering tasks that you had.

HARWOOD: So it really came down to something as simple as going to the bathroom.

WENDT: And—something as simple as you're going to the bathroom, you know? It wasn't a simple task. As a matter of fact, even having the elaborate bathrooms you know today, you know, that for liftoff and so on, the whole crew (not just the females but the males) wear diapers. And the same way you need—I mean, they're actually pull-ups, you know. And the same way you had to make provisions for people going on a 5-hour EVA [Extravehicular Activity]. I mean, you can't just go and open something up in space and says , "Okay, I need to go to the bathroom." It doesn't work. So you have to sometimes go to very fundamental things.

HARWOOD: We talked about the closeout for Gemini. Let's move on to Apollo and talk about that closeout process a little bit. I mean, that we were talking—I mean, we've touched on some of the issues, because of the safety issues. But walk me through that closeout. When you'd leave the astronauts alone and what you'd say to them and—

WENDT: Well, in general, we always in Apollo—To begin with, the technical aspects. About 3½ hours before launch, after the rocket has been fueled, everything has been cleared for 3½ miles. Then the closeout crew, which at that time was only four people because the

two suit technicians come with the flight crew, we go out to the spacecraft. Now the spacecraft was closed up during the launch vehicle tanking. So we go out there and the first thing you want to worry about is that you don't have any hydrogen floating around in there. So, then you open the hatch, and now you go ahead and the backup astronaut—By the way, the backup astronaut always a real astronaut who is part of the closeout crew. He goes in and he resets the switches. So resetting the switches for the next program, so to speak, and then he has some other jobs that need to be done. And one of them was always to put chlorine in the drinking water system, which was an ejection, which was sometimes of a messy side sometimes. Sometimes we had little leaks, and sometimes we didn't. And so he had quite a few things to do.

Once we had everything cleared away, then the flight crew would arrive. Now with them came the suit technicians. Now that was our free times (what we called "free time") between the time the flight crew arrived and they would get in, the first one would get in, we had 2 minutes. Because that was the time the two technicians had to arrange all the hoses, all the comm, and so on. That was the time when we used to exchange little gifts. And they were of different nature, but they were normally inside story gifts, you know. In other words, like something that comes on my mind on Apollo 13, where Fred [W.] Haise's [Jr.] wife was expecting a baby. We made him a couple of diapers and a doll to practice how to put diapers on dolls. Now for 11, I had made a 4-foot high key to the Moon. You see, when people go to a new city, somebody gives them the key to the city. So I figured they needed a key to the Moon. It was made out of foam but all enclosed in aluminum. Because, see, we always had to worry about flammable material. So, and we would give each other little gifts.

HARWOOD: Now did they take that key along with them?

WENDT: No. No they left them.

HARWOOD: You'd just present it and then you take it down.

WENDT: The suit techs would take it back and it would then go to Houston [Texas] for them when they came back, you know. No, you couldn't put anything in the spacecraft because we controlled very tightly what was going in the spacecraft. With the exception of the PPKs, which is the personal preference kit, you know little bags on the side of where the astronaut could elect things that they wanted to take, like medallions or—

HARWOOD: What have you heard, or what do you know first-hand is one of the strangest things that ever flew along that somebody wouldn't think would've been on a spacecraft?

WENDT: Oh in—I don't know how many went along, but in Gemini, we had a bunch of ants in the spacecraft, which we had a heck of a time trying to get them out. We don't even know how they got in there. But can you imagine ants? And anyhow, but that was probably one of the strangest—I'm not sure what other strange things went along.

HARWOOD: That the astronauts might've taken?

WENDT: Now, see that was—normally we kept that pretty quiet. As a matter of fact, on 11 I had a little opal I wanted to send along for my wife. I asked Neil if he would take it. But in order to do that, I had to put the opal in plastic. I had to run it through a vacuum chamber to evacuate it. I had to expose it for 24 hours, 100% oxygen atmosphere. Make sure we run it through a spectrometer that it didn't outgas anything. Because you had to be very, very careful what you took along because, yeah, it was touchy. You didn't want to have anything detrimental to the health of the crew. So, it was very, very thought of as to what they would

take along. Normally what they would take in the PPK was cleared and manifested with the Chief of the Astronaut Office.

HARWOOD: Now, you brought up Apollo 11. What was that like, to close out, and you think, "They're going to the Moon. I mean, they're going to the Moon!"

WENDT: Now, again, you're on a complete different frame of mind. You are not thinking, "They are going to the Moon." You are thinking, "I got a 148 items that must be completed. They must be completed on time." The monster is behind you. The monster is the countdown clock, okay? So you're worried about everything. Do we have all the right tools? Do we have the right holders? Do we have the right fittings? Do we connect everything correctly? Don't make a mistake when you hook up a line. You don't worry about the other things about it. You worry about what must be going correctly at that time. Sure. Once you leave the pad at about T minus 55 minutes, then you can relax. —You said, "Okay, there's nothing I can do right now except I have to go back if we're scrambled." So, once it clears the tower, then you are ready to party, partially, because you have no longer control over anything. Houston [Manned Spacecraft Center] has control over it.

And there's nothing you can do anymore. Even if they parachute, they go up in the ocean and it's not any of your problem. The only thing is: You worry about certain aspects of it. You know, the first thing is: Okay, ignition. Do we clear the tower? Then later on, you know first-stage separation. I mean, the escape rocket separation; all this jazz. Once they're in orbit, you can breathe somewhat easier—And you worry about the milestones. But you don't—I mean at least I don't know all the individual ramifications. Like a booster guy would worry about—somewhat more about an engine performance. I didn't because I knew they were the engines and they were running and I knew what they could do. But I didn't know that there are certain things that must be falling, attendant parameters, and so on. The

guidance people were worried about something else. So, you have your own individual worries. And even after we saw it on TV, you know, you find it hard to believe that that actually has happened. And then you worry about the one shot they have of getting off the Moon. There's only one shot. So, but you knew all the ramifications. If they don't make it, okay. So be it. You know, there's nothing else you can do about it.

HARWOOD: Do you—On Apollo 11, how did you split up tasks with like the safety test conductor, which who I guess was Clarence—I'm not sure how to—

WENDT: They—As a matter of fact, the NASA test conductor for the spacecraft was Skip [Clarence] Chauvin. Now it's not a split up. You go pretty much by the book. I mean, we have written—The book's all written and everything else is cut and dry. So with all of us, once we are getting to a point that we are integrated—then I go to the spacecraft test conductor and then, once Houston gets into the act, you know, I go to what we call the CVTS (the complete vehicle test supervisor). So you have a very, very strict chain of command; and you live within that chain.

As a matter of fact, Gene [Eugene A.] Cernan pulled one on me one time before he went. And we were—they used to go in quarantine. And we became—80 people became primary contacts, with the other 2, could made contact with the flight crews during the quarantine period. So—and you had to report to the computer if you had a cold or anything like that.

So once we had a test scheduled with a flight crew just before flight, and I had somewhat of a slight cold. So I told the computer that I had a cold but I had enough, about 30 feet of distance, I could distance myself from the flight crew. My office was here. So anyhow. And so the flight crew shows up and they had elected, in the white room, they had to change their clothes, you know, the bunny suits and all that jazz. And I said, "Hey guys,

get going, get going." —Time. The monster. So, and now you've got to understand, I'm listening to two channels on the headset. I have three individual telephones. Okay? I have two direct lines: one to the test conductor, one to the garment guy, and another one, a regular telephone. So you really are pressed.

So I get a phone call. "This is Dr. So-and-so. I'm in Houston. And I understand you have a slight cold." I said, "That's correct." He said, "I want you to get off the pad. I don't want you to be on the pad when the flight crew is there." And I said, "Sir, I have discussed it already with the medical people here, and there's no problem." He said, "Oh I don't care if there's no problem." He says, "I am the flight director—I am the medical director, and I want you to get off the pad." And I told him, "I tell you what. If you have that problem, you go to the test conductor. The only guy who can remove me is the test conductor." And the guy says, "Oh I'm a NASA guy. I'm in charge. I don't have to go." And he gave me a hell of a bunch of static. Now in the meantime I'm listening to my channel item: "45-142, are we done? Yes. Okay, 142's coming in." He bugs the hell out of me. So finally I told him, I said, "You know something, go to hell." And I hung up. And over in the corner where they changed clothes, there's Gene Cernan with a damn telephone in his hand, you know. "Gotcha!" So he got me.

HARWOOD: You all did play the "gotcha" game, right? Is that what you called it? Gotcha?

WENDT: Oh yeah. It's the gotcha game. Right. So and the gotcha game is that you have to get even or ahead. So here we go, the day before the flight. And we had for the primary contact, we had a little party at the Beach House. Are you familiar with the Beach House? Okay. So naturally there's not a parking lot there. It's all sand and so on. So—and Gene had a red Chevy convertible. So all of a sudden at 8 o'clock he says, "Hey, folks," he says, "keep on going partying." You know, naturally we only had Coke and—and Sprite. And—

HARWOOD: Of course.

WENDT: Anyhow, so we had a good party there. And he says he has to shove off to go to the press conference, you know. So he jumps in the thing, you know, and puts it in gear; and, oh-oh, he's stuck in the sand. You know going, "woo-woo-woo-woo." The wheel spins. So he puts it in labor, "woo-woo-woo-woo." It doesn't go anywhere. So, man, he gets frustrated. And it's 8 o'clock, you know. And so by that time everybody watches, all of us there, Coke in hand. And they said, "Hey, don't you know how to drive in sand? You rock it out of it." So he says, "Man, this thing won't rock," and he gets frustrated and it gets later and later, you know. And he needs to be there because Slayton is there and all that jazz. So finally he tries it forward and back, and it doesn't go anywhere. So finally he says, "Hey, you guys intend to get me to the Moon? You can't get me out of this damn—Push me out or something!" So finally a guy in the back says, "Hey, Gene. Why don't you take it off the wooden block?" So he jumps out of it and the rear wheel was about this high off the wooden block. So he gets out. He says, "Where's Guenter?" And I had a raunchy pair of coveralls on because there were all these stickers. "Gotcha!" I had to bring my own jack and my own four-by-four from home to jack out his rear wheel while they were in there partying. You know, "ssh-ssh-ssh," and the wheel was that high off the ground. So that's how we got even.

The same way with Pete Conrad once. I was coming back to the—I had an office close to the flight crew training building. And 7 o'clock in the morning, there were about three, four astronauts standing around in the office. Now these guys don't normally stand around the office, you know. Hmm. They've obviously got something else to do. So you get a funny feeling. Why in the heck are these guys still there? So, but I couldn't worry about it—So I got a phone call. And a guy asked a question that I had to answer. I opened my desk, and out of the center drawer comes a 4-foot long live black snake. Right at me. So

I back off with my chair, tear the phone off the wall, and everything like that. Pete Conrad. "Gotcha!" He came during the night in the training—and he found that live snake. He broke into my desk and stuffed that thing in. That was a true gotcha. He got me all right.

Well then, before his flight, he had the typical press conference—where he was live on TV. And, as usual, he was somewhat late. So they had started without him—And so he went on the stage—and they had a—they photograph it. And he puts his coat on. And that's when he found out that I had sewn the sleeves shut. It looked very good. Gotcha!

So see, these were the little things that one would do to each other, so, and that's the same way with that steel helmet there. . . See, when Shepard went, he knew something was coming because I figured he was the oldest astronaut at that time to fly. So, since he was the oldest one, I had to provide him with a piece of lunar support equipment. And the lunar support equipment was a walking cane. But what he had done was, he had sent some of his buddies down to Miami [Florida] where they were filming then *Hogan's Heroe*—

HARWOOD: He got you back?

WENDT: You can see the picture behind you there, see? And he presented that to me here—Colonel Guenter Klink. So that's give and take, except in that thing there he Dr. Debus got extremely upset because our built-in TV camera picked up that swastika on national TV. And so Yardley jumped at me and he said, "How in the heck did you do that?" I said, "Hey, if you have a complaint, talk to Shepard about that, you know."

HARWOOD: But it's *Hogan's Heroes*.

WENDT: That's the way it goes, you see. I mean, these were the 120 seconds I told you. If nothing went wrong, we had a 120 seconds to exchange little gifts.

HARWOOD: So that you would—sometimes you would carry out a gotcha during that time.

WENDT: Yes. You see, that's the same thing with that fish that came up on Apollo 11. The most important flight. We had [Neil A.] Armstrong, he gave me a coupon for a ride between any two planets, anytime I want to, you know? So, and [Edwin E. "Buzz"] Aldrin [Jr.] he had gotten me a copy of (it's right in that cabinet there)—of *Good News for Modern Man: A Condensed Version of the Bible*. And I told him, I said, as a—his dad had donated it to a Presbyterian church in Houston. I said, "You were too cheap to buy one. You had to get one from those things back." Anyhow, so it's autographed there. And then when [Michael] Collins' turn came to get in, he had a brown paper bag, illegal as you know what, in the white room. And out of it comes that fish you see up on the wall there. And he said—See, I used to go and take the astronauts fishing when they were in quarantine, and we would go water skiing and things like that. And he says, "Hey, at your house I've never seen a big trophy trout or trophy fish on your wall. You need one." So now we have a trophy trout. Now there's three things wrong: Illegal size. Not cleaned. And not preserved.

HARWOOD: It was a live fish?

WENDT: It was—

HARWOOD: It was a dead fish.

WENDT: No, it was frozen, ja.

HARWOOD: A frozen fish.

WENDT: As a matter of fact of all the things in my life people had gotten those things for them the night before launch, out of the Banana River. And then the food techs had collaborated to go ahead, freeze it, and just stick it on the board. So for 22 years it stuck in my freezer, until I found somebody to freeze-dry it; and now I can hang it up on the wall.

HARWOOD: That's amazing.

WENDT: So these were little things—if we had the time, then we could do that. To break the tension.

HARWOOD: Now the answer to this might be one of the stories you've already told me. But, what was your favorite gotcha that somebody did to you and that you did to an astronaut?

WENDT: I don't know. It was lots of going back and forth. You always had that back and forth. I don't think there was any favorite one. I think the one that got me the most was that live snake, because that was really something.

HARWOOD: It scared you.

WENDT: Because in here, in Florida, a snake is something you always worry about.

HARWOOD: We need to take a break?

VOICE OFF CAMERA: Take a break.

HARWOOD: Yeah. I don't want to—

WENDT: Where did we leave off?

HARWOOD: Well, I'm going to ask you about, actually, you know, earlier you were talking about the checkout at the pad and that preflight checklist. And you kind of went through a few of the procedures. I'm curious: Do you still remember the preflight checklist? I mean, can you, like, go through it in your mind? And do you find yourself—

WENDT: I have one right here. I mean—

HARWOOD: But do you play it over and over in your mind? And—

WENDT: Not anymore. Because we knew the major things we had to do—But the individual steps, which step number it was, and which valve it is—As a matter of fact—I had a hard time because, again, when we did that scene at the white room, Tom [Hanks] says, "Hey, I want to have the correct pressure reading on the cabin pressure gauge." I didn't know what it was. So I had to get back to find my ECS [Environmental Control Systems] engineer. I says , "What was the actual reading we had?" Well then we had to set that gauge right. And that's how accurate he wanted to have that stuff done.

HARWOOD: So you used your preflight checklist when you were a consultant on *From Earth to the Moon*?

WENDT: Oh yeah. And not just that. I mean, I had about 8 or 10 books over there. It's not just a preflight checklist. I mean, we did certain things. —Like for instance, how did we

position the M-113s on the pad? You know. And how did we do this? And in the cabinet there behind me, see, I have about 1000 pictures yet and so on that you had to go back and—. Let me show you something there. Hand me that light book there for a second.

Okay. See, here is the real script. By the way, every time you see a revision, see, the color changes for a revision. And then in reviewing the stuff—. Okay. See, then they use certain aspects of it. Like for instance, we were talking about when—after we did that, he said. Wally Schirra talks to me, and he says, "Hey, the elevator is malfunctioning." I said, "That isn't what he said. He said, 'The elevator crapped out,' —" See that's the way—

HARWOOD: Did they write in your change to "crapped out?"

WENDT: Oh yeah. Now see for instance here: [reads] "Guenter and the remaining crew enter the command module with fire extinguishers. We swing the camera back in time to catch Guenter and the remaining crew, who don gas masks, entering the command module with fire extinguishers." We would never do. See, I mean, these were things in the script that I said, "No, hey, that doesn't work. We don't do it that way." And—

HARWOOD: So you worked to keep it accurate?

WENDT: To keep it accurate. See, when Wally said—something like—When Wally came up and he says [pause; looking through script]—In that scene, he says, "Yeah, we did pretty good." I said, "No, you could do better than that even." So he said, "You never give up, do you?" And let me see [thumbs through script] when we had the bigger things in there. That's when it—You see here [shows script]. We have notices, when we did the scenes actually: "All must be in Nomex clothes." You know. Then—And Young said, "That cord must be under the couch" because he has to climb after the crew. Then the backup pilot

stands at the foot end, and he has to climb on the nearside couch. So when we did that he had to have the headset things in there. And then let's—there must be space below the center couch. The camera people wanted to have that space. I said, "You can't have it. I need my guy to come out this way." And the leg supports must be up.

See then [points to script]. I asked him if they want to do an O_2 check? And that was 95%. Hoses should be hooked to the hatch and not where they had it there. And disconnect the hoses. Then they had to reverse. And so on. There were lots of things that you had to do, to do it correctly—

And they said—He has me talking to the STC, the spacecraft test conductor. I said, "No, at that time I talked to the CVTS, which is the complete vehicle test supervisor." You see, the changeover in command later on is—in view of Skip Chauvin, he has the stuff that goes in there. Then, [reads] "We cannot do this," —But see, this is the thing that you have. When I thought—Okay. I thought—[thumbs through script] Is it in here? I think in my other book, I have—.

Actually I had—I still had the launch count from the Apollo-Soyuz. And then we compared notes—I mean, actually the step-by-step sequences that we used. So—

HARWOOD: Well, let's go back to the real thing. The real Apollo. And when you're doing those things, it was really, really dangerous. And I think, you know, one of the things that I know that you did (and then tell me when you did this), that you helped establish the memorial for NASA technicians who were killed in the line of duty. And tell me about who some of these people were. How many technicians are we talking about?

WENDT: Now we—Actually, we talk about seven total. But let me go back and talk about something else that—Go back to Mercury first.

Before we flew Glenn, something bothered me. I was always going into the Air Force Base, you know, it was our Air Force Base over—If you've ever driven up over Cape Canaveral Air Force Base? And in the middle of the road you see a beautiful flag there, right? Now we never had a flag there. So here I go and I drive in every day, and spend ungodly hours. And I said, "Now, we are all in the Cold War, you know, against Russia and so on." And I thought—One of the things that I ought to remember. You don't really work for McDonnell. You don't work for Convair [Astronautics Division of General Dynamics Corporation]. You don't work for NASA. You work for the United States. Why don't we have a flag that when you come in you realize you're now working for the United States, not just for a little outfit, the company that you work for?

So I said, "We should have a flag here that reminds the people that come to work they are working for the program for the United States." So I wrote a letter to the commander of the Air Force Base, and I said, "Please let us have a flag there." So I got a letter back from a Colonel—I forget his name right now. I have all the literature there. And it said that "according to Air Force Regulation XXXX, only one official flag is permitted per command. And since their command is at Patrick Air Force Base [Florida], that's where the official flag flies. So therefore, they could not have another flag at the gate." That got me really upset.

So I went ahead and I wrote back and I said, "Okay. At no cost to the Air Force I will secure—somebody will dig a hole to put a post in. I will at no cost to the Air Force secure a pole and a flag. And I have commitment from Pan American, again at no cost to the Air Force, to raise and lower the flag. So please give me permission to put a flagpole in and do that." So I got a letter back and it said, now they still couldn't do that because they would have to get permission from Washington [DC]. And they "are sending two officers there to Washington to get that permission." Well, I called them back and I said, "If you ever send the people let me know who they are and who they want to visit, because some of the people

in Washington are interested in getting that flag there, too." And I helped them out to ease the way.

So the next thing is I know, they said, "Oh I didn't have to do that because they have found a way to put that flag there." So now, when Mr. Mac, you know, McDonnell (he always liked to be called "Mr. Mac"), he came down one day and I said, "Mr. Mac, I committed you to $10,000." Now he was used to me doing things—He said, "Oh,—what did I buy?" I said, "Oh you were going to buy a flagpole and you were going to buy a flag and you were going to dig a hole and put the flagpole in." I said, "You will see the whole thing. It's going—it's beautiful," I said, "See, we were going to put it there and the Air Force couldn't have—didn't have the money or couldn't afford to put it there. So I figured that we would do that, and you would help me pay for it." He said, "Organize it. You knew I would have done it. But," he said, "I have a curiosity. What would you have done if I hadn't given you the money?" I said, "Simply, Mr. Mac. I take my hard hat I turn it upside down, I go to Convair. I says, 'Could you help pay for the flag?' I go to Martin, 'Could you help because McDonnell can't help me?'" He said, "That's typical of you, isn't it? You never follow the rules." And so that's how we got the flagpoles."

Now there is a follow-up to that story. Tom [Thomas P.] Stafford liked that story so much—he always used to repeat it that, yes, we have a flagpole. So now at the end of the program, I had to go to California to help them build the Shuttle. So at that time, lo and behold, who is the commander of the Edwards Air Force Base [California]? General Stafford. So the first day I was there, I got a call from him. And he says, "Hey, my wife and I would like to have you over for lunch tomorrow—Come on over." So, okay. So we met for lunch. And the first thing he says, "Don't say a word. We have seven entrances, and we will have seven flagpoles coming up. Colonel Brown has gotten the job of putting flagpoles" because they didn't have flagpoles at the entrances either. And, "Damn it," I said, "we are

working for the United States. We don't work for contractors." But he said, "They will be there."

And now a funny thing happened. Colonel Brown was my contact when I worked with them—on the Air Force approach and landing tests [ALT] at Edwards. And he had just gotten a brand-new staff car, like your S20V. And he had told the sergeant to find him flagpoles; he needs seven of them. And the guy somehow, somewhere had found eight brand-new flagpoles. Now he was so happy. He had them on a truck. He drove over to Colonel Brown's house and backed the truck with the flagpoles right into his brand-new staff car. And for the next year, every morning, "Hi. Morning, Bill. You and your damn flagpoles." [laughs] So that was the story. We did get flagpoles there, too.

So then, after the Apollo fire—After the *Challenger* explosion, there was a monument to be built for the fallen astronauts. So I got to think. I said, "We also killed some technicians—when we had the GN_2 thing and then we—the spin test facility blew up, and we killed one on the Gemini pad." There were about seven or eight, I don't want to quote the number. So I made an effort. First, I contacted the head honcho of the astronaut memorial foundation and I says, "You know, since we make a memorial for people that have died in the line of duty, how about if we put the technicians' name on there, too?" And I was told that technicians actually don't rate that much. So which had me completely upset. I said, "Are you telling me that the life of a technician is not worth as much as the life of an astronaut?" I say, "Tell that to the families." So I was upset.

So at that time, Mr. [Forrest S.] McCartney was the KSC [Kennedy Space Center, Florida] director. So I sent letters to him. I said, "I would like to see a memorial for the technicians, because in my book a technician's worth—life is worth as much as one of an astronaut." And they said, "No," they couldn't do that. There were rules and regulations and rules and all that jazz. And then I got the word, since I was still employed, through the head office that the General McCartney doesn't really want it and I should discontinue my efforts

to do that. So, since I knew who signed my paycheck, I kind of quit that. But then a year or so later, I retired. And then I couldn't be fired anymore.

So then I started a set of public speaking engagements. And I was very grateful to the Cocoa Beach Women's Club who said, "What can we do?" And I said, "Oh you can always write letters and make phone calls to General McCartney." And that time, one of the astronauts was the number one man at NASA. I says, "Why don't you call him and send him a thing?" So I went on a campaign because, to me, it was bad that we didn't do that. So a long story short, then after the—after a while I finally got a phone call from McCartney and he says, "Yes, we do have a memorial and we will put it there." And if you ever go to the IMAX Theater, between the two IMAX Theaters—There is a picture of McCartney. Oh there it is [points], see? And when we dedicated it, he said, "I'm so glad you made it happen." And I have some different thoughts about that subject. But, yes, we did get a memorial because I felt like—as a matter of fact, the widows of the Rockwell people and so on were there for that dedication. But then again, see, I sometimes have a one-track mind. Once you tell me something cannot be done, it's a challenge. So that was one of the challenges. And I'm glad we did that. Because I felt like that was the right thing to do.

HARWOOD: Did—what was your closest call as a—?

WENDT: The closest call actually came on Gemini at one time. We had evacuated the white room and we had loaded the hydrogen. And we came back, and when we got up in the white room, I took a look at—we had a hydrogen meter on the wall. And it said, 94% hydrogen. So the first thing is, I yelled, I says, "Nobody move! Nobody key a mike! Stand still." So now I was faced with having hydrogen. And hydrogen you can ignite by just stroking your plastic clothes, and you have a spark, and there you go.

So now what do we do next? In the meantime, I get on my headset. I get all those questions from the test conductor, "What's the problem?" I didn't dare key the mike. So I just shook my head and I hope he picked it up—on the TV. And, so then I looked around. Now I had to get circulation. So I told the one guy that went to the door, with a slight bias there, I says, "Very carefully," I say, "turn the knob and slowly open that door." Then I had another tech there at the elevator door. I says, "You have a screwdriver?" "Ja." I said, "Don't slip. But up there is a catch. Depress that catch and open that door." Now, I mean everybody stood there like mummies—But that was one of the most critical time, because that darn hydrogen can get to you—So then he opened the elevator door and then it naturally came down rather rapidly—so the leak was gone. But that was one of the scariest moments that we had because one wrong move and we would be in trouble.

HARWOOD: What do you think made you the kind of person, though, that faced with that, like you said, my husband likes to say, I would panic. But—

VOICE OFF CAMERA: I'm just going to change tapes here.

HARWOOD: Okay.

VOICE OFF CAMERA: —feeding.

HARWOOD: I was asking you about how—You know, you told the story about the hydrogen. And you know some people would look at that indicator and just freeze or panic, or not be able to go through all the steps you have to go through to protect those people. Not just yourself, but the people with you. You know, what do you think it was about your background or yourself that let you do that?

WENDT: Now again, you know, remember in the beginning I mentioned to you I would sit many, many a nights on the river? And I like to be very methodical. In other words, a problem is something that you need to take care of. Now the first thing is: You look at your options. To reduce whatever presents a danger and reduce a danger. And all these things, I have thought is, What do I do if I have a fire? What do I do if I have that? What do I do if I have a guy bleeding to death? And it goes through into intimate details.

For instance, I upset the NASA people one time when they found out that in the two cars I used for the closeout crew I had a big old rope. He says, "Why do you need a big old rope?" I said, "If one of my cars craps out, I just tow it. If I have a flat tire, I drive on the flat tire. I get my people back out there and I do this." But they never thought about it. He said, "Now, wait a minute. These are government vehicles." He says, "The rules don't allow that." I says , "The rules don't apply." I said, "I need to do something and I do whatever I need to do when this comes up." And these were what I told you are the "what-if" games. And I always played the "what-if" games.

And it has been all through my life. I was trained to look at a problem, not like, "Okay, there it is. What do you do next?" You analyze it. You say, "Okay, what is really the problem? And what are my options?" And then you select the best option you have. Or you find out, "Man, I really don't know what I can do. So I had better try to find something that I can do."

Like I told you with Nomex clothing. We didn't have it. Now, and see I was worried about hydrogen and plastic, you know, polyester clothing. So I said, "Okay, we need to have something that doesn't burn. How do we do that?" Okay, get somebody to find something, but find some material that doesn't burn. So you eliminate as many problems that you can think of.

And what used to be funny, when we—Normally one of the strictest things was, you could never have anything drop into the spacecraft so anybody, if I ever had VIPs, I would feel them down to make sure they didn't have pens, fountain pens or something loose that would drop in the spacecraft. Except one time, I found myself, you know, we had I think the wife of one of the astronauts, I go like "Oops! can't do that. " But so you set your mind to certain things that have to happen. And then you don't deviate. So that's persistence. I mean, you have to be conscious with what you do and, unless you have something better than that. But panic is not something. I lived through World War II. I mean, so panic is not something is part of you.

HARWOOD: You were under a lot of pressure, and let's talk about that in relation to one of the Gemini flights. When you had to launch Gemini VII, Gemini VI-A, within like 9 days of each other so that they could hook up and practice this docking procedures that would let us go to the Moon. You know, what did you think when they first told you, "We want you to do this. You know, one and then another one in 9 days." And what input did you have in planning that mission and making all that happen?

WENDT: Now you start off with what you have, okay? They tell you, "You need to have that spacecraft ready in X number of days." Now you look back and you says, "Okay. Normally what we need to do takes 15 days. All right. First thing I need to do is see what I can eliminate. Then if I can't eliminate, shorten it." So you go with every system engineer and you said, "Okay, you know what you need to do: You need to check everything and everything you can. What is it you really *must* have? Instead of 2 hours, I give you 20 minutes. See if you can make it in 20 minutes." Okay.

So you condense what you have to do. You can't say, "Okay, oh that is impossible to do." You say, "Okay, now let's see what we have and how can we arrive at that point?"

And you take it piece by piece. But most problems you have, you can dissect and work them. Now some of the stuff is, you do not know. But this person knows how to do that. I mean, how can you cut the guidance? I don't know, but, "Hey, man, you're a guidance expert. Tell me what you think you could avoid making without endangering the crew?" Okay.

The number one is always: You cannot endanger the crew. What happened if, like, for instance, if you do the comm checks and you said, "Okay, now one of your radios is going to fall out. Okay. Now that's a chance you take, but you have four radios. Right?" "Okay. I'm willing to go ahead with three. You know, if it does happen." So, if one falls out and I can save 20 minutes by not checking that? "Okay, I'm willing to do that." And then you more or less, the things you do not know, you go to the people that do know and says , "Help me out."

And frequently, like for instance, I was a great believer in working with my technicians. And like I had to remove a component. And the engineer says, "Okay, yes, remove that component." He writes a piece of paper. Now I go to the tech and I said, "Hey, we need to remove that. But I have to have the new one in by tomorrow night. Can you do that?" He says, "Not really." "Why not?" "Oh because this is in the way. This is in the way." I said, "Okay, you tell me what you need to do to make it happen by tomorrow night." He says, "Now if you let me remove this, let me remove this, I can do it." So now I have to go back to the other two guys that he removes and I says, "How much do you have to do to retest it if you remove your piece of equipment? And can I retest it while you're still boarding the other one?" "Ja, you can do that." "Okay, that's not a problem." So I can remove this. The other guy can help you move your piece of equipment. "Yes. How can I retest it?" See, you're always—it's not just removing it. You have to retest it. "Can I do that in the timeframe while this guy does that?" "Yes, you can do that." See, this is how you sort out the pieces and get them back together.

So it's—you worry what you have on hand. You—first you take what you already know and you say, "That's no problem because I can do this." Then you go into those things where you need additional help. And, like a great so-and-so, are your individual system engineers and your individual technicians. I mean, the guy who works on those things, day in and day out, he knows better than the engineer how to replace something. Okay? So you go to this guy, and then you have the engineer, he writes a paper if you need to. So, this is how you get things done.

HARWOOD: Did you, on Apollo 13, which, you know, was obviously a very close call—You know, were you involved in that at all? Or was that something that—

WENDT: I got involved in a unique way. I happened to find myself, for some other reason, I was in the control room. And on the speaker I hear him say, "Houston, we have a problem." Now you are so used to listening on the headset to individuals—during test and so on. And when you heard the way he said that, I said, "Oh oh. Big thing." So now I know I have a problem. Next thing is: What problem? Okay, then I hear the system, "The O_2 pressure's going down. This is going down. We had a big bang." Well, that's a big problem. Here it was already nighttime. Okay. The first thing I need to do is I call the base manager. I says, "We have a big problem. We need to bring all engineers in. We need to strip all paper—to see what's on the tape and so on. And start making phone calls."

HARWOOD: And this was at KSC?

WENDT: That was at KSC, ja. I mean, that's—See, I mean I heard it here. You see, we have duplicate firing rooms. Houston has one. The company always has one here. But the way he said it, Jim [James A.] Lovell [Jr.] said it, "Houston, we have a problem," I know that

wasn't anything easy. And so the next one comes to mind: Okay, we have a problem. That means there's a lot we don't know. How do we know what it is? I don't know what system it is. Bring all the system engineers in. But first thing you want to tell the base manager that he can tell the president of the company or whatever, we're going to run one hell of a bill up because now I'm bringing in anything I can. So we brought all of the people in—And brought all the managers in. And that was the thing where I got involved in it, because I couldn't do anything about it. But knowing what I knew at that time, I could take the first steps and then turn it over to the people. Once they were here. Because I didn't know why would the O_2 pressure go down? I don't know the system that much.

HARWOOD: You knew those astronauts, though. And you had maybe—

WENDT: When you heard the words—you could tell. I could tell you when a guy was ticked off—when he was responding to a command. And especially Wally—when the guys bugged him to do more than that. He finally told them to, "Get off my" you know. He says, "Hey, damn it, I'm in charge." So, but you can tell, when you are that close together from the response you get.

HARWOOD: Well, in some ways you were—you've been described as sort of a go-between with the astronauts. That because you did know them so well, you would kind of relay their requests or things to people. Go through that relationship a little bit about me—a little bit for me. And what kind of requests? What kind of things were they asking for? What reaction did you get from engineers that you'd go to with these requests?

WENDT: Now let's see. I think best that it can be—One good example that will give you some indication as to how things sometimes go. After the Apollo 1 fire, Wally Schirra was

brought in—to fly Apollo 7. Now Wally used to be a practical joker. But he was always an extremely serious guy. And when we talked about it, when we said it, we said, "If we don't fly Apollo 7 successfully, Apollo will never fly again," —So we knew we had to make it good. But now Wally was very, very hard up on the engineers and things like that, on schedules and so on. So finally somebody asked me, he says, "Hey, can you take care of Grant More Wally?" —He got the nickname of Grant More Wally. I said, "Ja, ja, I can take care of it." But by that time also, everybody was scared of Wally, and especially the home plant like Downey and so on. The guy would say, "Yes, sir; yes, sir." You know he would say, "I don't like this." "Oh we'll take care of it."

But there were certain things from them that they couldn't take care of. So one time we had what we called a COAS [Crewman Optical Alignment Sight] alignment tool, which was a gadget where you can align the guidance system with the stars. And the bracketry in the room we had was somewhat on the, you might say, the shaky side. And they had redesigned it. So finally, I mean, one meeting we were in, and it was a rather—flight readiness meeting, a high-level meeting with top managers and directors and so on. And Wally was bitching about the COAS alignment.

So I finally, I looked at Wally, I said, "Wally, we changed this thing as much as we can." I said, "That's the best we can do. If you can't make it do with that, I mean, we're just going to have find somebody who can fly the damn thing with the thing as it is." Wally looked at—By that time, I mean, some managers' faces had turned pure white. How dare I talk to the head astronaut—I mean like that. And Wally looked at me and says, "Okay. Why doesn't—hasn't anybody ever explained it to me like that?" I said, "Because they are afraid of you!" And he didn't realize that. —They would say, "Yes, sir, yes, sir; yes, sir." But there wasn't a thing you could do. I said, "Damn, there's nothing we can do about it." He says, "Okay, then we'll just have to make do with it."

And see, this is how things would go. Sometimes the astronaut would say, "Hey, could we do about something about this?" I would talk to the system guys. I says, "What can we do about that?" And they would say, "Okay, here is what the limitation [is]. But that is a big redesign. So then I would go back and I said, "Yeah, we could. But you got to realize if we redesign that, that affects this, that affects that, that affects that. We ain't going to make schedule on that. Now, is it worth that much to really do that? Or is that just something nice to have rather than must have? Let's sort it out." So we frequently would talk about that—as to: "What is it? And what can we do?" And like I used to be quite frequently in the astronaut quarters, because I meant, I had the key to the quarters. And after hours, we would hash out things. And they'd say, "Hey, man, I saw something I sure didn't like." I'd say, "What is it you didn't like?" And we would talk things over. And I'd say, "Oh, maybe we could do something about that." Or, "Hey man, that's just too tough a problem—to do that. That would be nice to have, but really you don't need it."

HARWOOD: Well, you know, you mentioned the fact that people—like being afraid of Wally or afraid of certain astronauts, or almost idolizing them and setting them up as these heroes. And it came out—You know, we heard with John Glenn, for instance, that Kennedy didn't want to fly him again because he was too big a hero to risk losing. Do you think, I mean—Give me your feeling about the way astronauts have become idolized. And is that almost a detriment to the space program because it's like we can't accept the risk? You said, they're—You told me, they're accepting the risk when they go do these things. But we idolize them, so we don't want anything to happen to them. And it maybe affected—You know, those early days of setting them up as idols and heroes and not just another part of the process, like you were—

WENDT: Now, see, here's the thing. I mean, the way I looked at it, it was: An astronaut was just one more link in a chain that had to be functioning in order to do it. He was not worth more than, let's say, a system engineer. Because if that system didn't work, he couldn't go. If the technician couldn't put the spacecraft together, the astronaut had no—nothing to go in. So to me, he was a worker. And as a worker, sure, he had moral responsibility. But at the same time, he needed to function just like the other people function. And I never put him on a pedestal. I rather let him know. I said, "Hey, you guys screwed up today." And that was—they understood that. I mean, they realized they were maybe something special. But they were running around. But not to the working people.

Because without the support people, they wouldn't go. And they realized that, too. I mean there's nothing—they could not make a spacecraft go. It took the people around it to make it go. I could not make it go. And you say, "Oh, you were an important person." No I was not. I was just one more of those links. I mean, you need a test conductor who really has to keep the show on the road. You need a system engineer. And you need to replace a part. And if you don't have the technicians, the astronaut doesn't know how to replace that part. So you need all these people. And for us, it was more or less a working relationship. Now then if you go to the home plant, where you talk about directors and vice presidents and now that becomes a different bailiwick. —These people are not working people with these guys. They visit. They visit the plant. They get a tour, and they hear the overall thing. And the big people worry about the budget or things like that.

We didn't worry about the budget or things like that. We had the nuts and bolts to worry about. And for us, the astronauts are like—they are just part of the machinery. And you accept your task. If you are willing to do that, okay, there are certain things that go with it. Like it or not. I mean, I didn't like to go 7 weeks without a day off. But that's what the job required. So, okay, you do it. And the same way with them. They had 16-/18-hour days. Astronauts had that, too, so they had to do it. And for us it was pretty much there was quite a

difference between the working-type people and the administrative-type people. You see, they are people that worry about the overall picture or things like that. But not when you get down to the working level, when things have to happen.

HARWOOD: Well, let's talk about another close call in orbit during the second Skylab flight, when their—they thought that there might need to be a rescue mission because of a leak that they had in their reaction control system. Do you remember that scenario? And do you look back on it and think, "Oh we should have prepared things differently." Or—do you remember?

WENDT: Now, to begin with, whenever you have a problem, there are two things that you have to answer. One, can we correct the problem? Two, what can we do to never repeat the same problem? Okay. If you can't answer both questions, you haven't taken care of the problem. See, frequently you cure the symptoms but you don't cure the problem. I'll give you a good example:

Later on during the Shuttle flights, I had a—I was on what they called the incident—accident review panel. We had a situation where a engineer in the control room overpressurized an OMS [Orbital Maneuvering System] tank. A very expensive piece of equipment. So it came up before the panel and the guys said, "Okay, so the guy screwed up. He didn't pay attention to it. So we'll give him a week off without pay. That takes care of the problem." I said, "No, it doesn't," I said, "because you have now taken care of the symptom but not the problem." The question was, "What is the problem?" I said, "Okay, if nobody told you and it was at a high-level meeting," I said, "let me tell you what the problem is."

The first problem was the guy had to watch two consoles because he didn't have enough people in the control room to do that. The second problem was, he was already 10

hours on station, so he was working too long. And when the overpressurization occurred was his manager was calling him on the phone for 15 minutes to explain what all went on. I said, "Now let's solve the problem. One: Let, in critical tests, the man watch only one console. Put another man there, even though it will cost you more money. Secondly: Try to work him 8 hours and don't work him to death in 10 hours. Thirdly: Tell the manager if he needs to have a question, not to ask the question at a critical time when there's a critical test in progress. And if he needs to ask a question, let him go down and stand in line and wait till he asks that question. Not on the telephone. Now if you take care of these three things, then you have eliminated the problem." And a guy says, "Hey, you're right. We didn't take care of the problem. We took care of the symptom."

See, that's sometimes the situation. People will take care of the symptom but they don't address the problem. And sometimes, I mean, when I come from these meetings I had to look under my collar. They said I would hide a bomb that I used to have because for some other reason, even after I was no longer actively—putting the crew in the Shuttle Program, I happened to know everything that went on and went wrong in the space center. And they were always worried about how come I knew all this. But there were lots of conscientious people that would let me know what went wrong, but they couldn't speak up because they were afraid they might get fired. You see, that's another one of those things.

HARWOOD: This is during the Shuttle Program?

WENDT: That's now during the later—that was before I retired.

HARWOOD: Did you—do you think that that's some of the climate that led to *Challenger*?

WENDT: No. The *Challenger*, I mean, in my book is—The biggest mistake made was when a bureaucrat overrules the chief engineer. The chief engineer of Thiokol had recommended not to fly and he wouldn't sign the paper for readiness for flight. But then the vice president decided that he would sign the paper, "Ready for flight." Now as a technical person, if you overrule your chief engineer, you'd better think twice and find out why he doesn't want to have that paper signed. Well, there's one of the biggest things.

HARWOOD: I guess I meant the climate within NASA, though, that led to the fact that there was this underlying problem in the first place and that feeling of not—

WENDT: Now, there again you're getting into an area where individual centers have their individual kingdom. And anytime you run into a bureaucracy, you have situations which you don't really care for. But—

HARWOOD: You mean Marshall?

WENDT: Marshall, right. And you have it again. I mean, sometimes with Houston, with Kennedy, with Marshall. Each one has their budget. Each one has their pet project. Each one's the ones that do that. And there is a competition which may not necessarily be the best for the program. So you have to worry about that. But, luckily I didn't have to play that game, even though I was accused that I completely disregarded who I was working for. But that didn't mean anything.

HARWOOD: Well, let's talk about who you were working for. Because you know many people would look at your career and just assume you're NASA. And you never worked for NASA.

WENDT: I never worked for NASA.

HARWOOD: You always worked for contractors.

WENDT: Yes.

HARWOOD: Did—how—what was that relationship like? I mean, and describe it to me in terms of what it was back then versus the contractor/NASA relationship today. And how you interacted with your NASA counterparts.

WENDT: Now—Okay. To begin with you have to establish in—at least I felt like it in the program—you had to establish who you are and what is your credibility. See, if you go to a meeting and you make a statement like "They said this is such and such" and "It has been known," and just say, "Okay, wait a minute. Who is 'they'? Who has known what it has been known?" You're not credible. So you establish your own credibility. In other words, if you make a statement, you'd better be prepared to work it, to document it, with work papers or with—As a matter of fact, let me put it this way.

I had a very great teacher: John Yardley (I guess you've heard his name some times before). At one time in the Mercury Program, we had a camera in the spacecraft and St. Louis sent us a bracket to hold the camera. I looked at this thing. It looked flimsy as you know what. So I take the bracket, I walk in Yardley's office. I said, "John, that thing is going to fall off on liftoff." He looks at me, he says, "All right. If you have the numbers, put them on the black bulletin board. If you don't have the numbers, get the hell out of my office and come back when you have the numbers." Good lesson. I opened my mouth before I was prepared to make that statement. Good lesson.

I went back. I ran the numbers. And, luckily, I was right. So I got the numbers. I went back, and John said, "Okay. You could have saved you the time before. Next time you come in, come when you know what you're talking about." A good, valuable lesson. From then on, if I made a statement, it became known that I knew what I was talking about. And then you go into group meetings, and at one time it was rather interesting how it reflects. Because people there then know your credibility. And you have to protect it. I mean, you cannot fudge it.

I went to a meeting and a NASA individual said, "Okay, I'd like to spend $128,000 on some instrumentation on an oxygen system—on the ground support system to collect the data." The NASA man who run that, what we called, Level II program, he looked at me. He says, "Do we really need it?" And I looked at him and I said, "Okay. Let's put it that way. If you are in the process of collecting data for some eternity, it's nice to have. If you ask me if it is essential for the program to work? No." So the guy who made the presentation said, "What the hell is it to you?" I says, "This is NASA money. This is not your money. It's not contractor money." So I looked at him and said, "My good friend," I says , "we do not have NASA money or contractor money. We have program money. And if one or the other wasted, that means the program is suffering." Needless to say, the thing was disapproved. But I wasn't very much liked for that. And this was all my way.

I—when I hired in as North American, as a matter of fact I made a statement. I said, "You need to understand, I will never sacrifice my conscience for the benefit of the company. I may cost you money, because if I see something wrong I will speak up. And if you don't like it, don't hire me." Well that was my basic statement. And there was also what the flight crews know. If I saw something wrong, even my own company had screwed up, I would speak up and let it correct even if it cost money, our own company.

I could not go by the badge. The badge didn't mean a thing to me. I said, "We are in the program and we have a job to do. And you either do the job right, or get out of the

way." And see this is how I came to be known that everybody—I mean, a lot of people thought that I worked for NASA. As a matter of fact, my big boss later on in the Shuttle Program and so on, [Thomas J.] O'Malley, he always said, "Hell, you just work for NASA. We just pay you." And it's a funny thing. When we did the Tom Hanks' *From the Earth to the Moon*, you saw in the book. I was played as a NASA scientist with a NASA badge. I said, "When O'Malley sees this, he'll say, 'You know I was right. Damn it, he always worked for NASA! We just paid him.'" Well this—see that never entered my mind. I could not follow some of the rules.

As a matter of fact, Walter Burke once asked my wife, at that time, he says, "How come your husband always violates the company rules? Can't you make him stick with the rules?" She says, "You're asking me?" So he asked me. He says, "Why don't you live with the rules?" I said, "Walt, it's like that. If the rules let me do the job that needs to be done, I follow the rules. If it doesn't let me do the job, I do whatever it takes to get the job done right. Rules or no rules." He said, "What if everybody else would do that?" I said, "Well, it's real simple. You change the rules."

And there was a interesting point with Rocco [A.] Petrone. I think you've heard the name of Rocco Petrone before? One lunchtime we were on the Apollo pad with a spacecraft sitting there. At about lunchtime, all I had was one what we called an I&E monitor, an inspector on the deck, and myself, and a tech supervisor. All the technicians were down for lunch. Now a hell of a rainstorm comes up and my white room leaks. The spacecraft is open. So I look around, and I point to the tech supervisor. I says , "Get a roll of plastic." I look at the inspector and I said, "Get me some tape." And I look at Rocco. I says , "You grab that plastic and we wrap it around the spacecraft, and we tape it up" because by that time the rain came down. Okay, we didn't get any rain in the spacecraft.

So when it got all done, I said, "Okay, Rocco, now you understand what it is that we just violated about 40 rules and regulations." He said, "How is that?" I said, "If you go

according to the rules, I would have gone on the headset and tell the test supervisor that I have a leak in the spacecraft. The test supervisor notifies Pan American, the supervisor of Pan American, that I have a leak in the spacecraft. He would come up and look at the leak. Then he goes down and tells his people that we have a leak and they need some plastic, they need some raingear, and they need to come up and fix the leak. In the meantime, I've got 2 feet of water standing in the spacecraft." I said, "Now you realize why I'm excused—always accused of not working the rules." I said, "You just violated about 40 rules!"

HARWOOD: What space—

WENDT: I said, "You didn't have a piece of paper to even attach that plastic." And he looked at me—

HARWOOD: What kind of spacecraft was it?

WENDT: An Apollo spacecraft.

HARWOOD: Apollo.

WENDT: And see, he knew that's the way it is. But if I had gone strictly by the rules, I couldn't put that plastic on the spacecraft without a piece of paper. I had no signatures. I had no authorization. I had nothing. But I had a leak in the roof. You see, this is when you have to go ahead and make exceptions.

HARWOOD: And what did he say to you?

WENDT: He said, "I won't bug you again."

HARWOOD: What was the last flight that you served in your capacity as pad leader? I mean, what—

WENDT: The ASTP—the Apollo-Soyuz Test Project.

HARWOOD: Okay.

WENDT: Okay. And then I did the same functions when we did the approach and landing test at Edwards.

HARWOOD: Okay. But when you did the Apollo-Soyuz, did you know that going in that that was going to be your last time as pad leader?

WENDT: Oh yeah, I would assume that because, see, then we didn't have anything left to go on.

HARWOOD: Right. I mean, what were your feelings then, thinking, "Wow, this could be the last time," and—

WENDT: It was a sad time. Not only that. Once it lifted off, I saw technician supervisors handing out pink slips to, what I said, my technicians. That was a sad sight. Because immediately, you knew, people got pink slips and things like that. As a matter of fact, I was also receiving a pink slip because I was at that time in engineering. They said, "Okay, you

have an open transfer." For 4 weeks you could look within the company to find another place. And, an interesting thing happened.

Jules Bergman was—became a pretty good friend of mine. He saw me. He says, "Now what are you going to do after the program is over?" I said, "Oh hell, I'm going to get laid off." He says, "No, you are not." I said, "Yes, I am." He says, "No, I don't believe it." I said, "Hey, look at my pink slip." He says, "That can't happen." I said, "You have done all of this—and now they're going to lay you off?" He says, "Oh, call your home and tell your wife there will be a crew coming down from New York, and we're going to put it on the evening news." So I came home and there were several people and two vans and all kinds of equipment. And they were shooting 400 ft of film. And that evening news, I think Newman was their commentator at that time. They broadcast on the news that now I was going to be laid off. It wasn't 15 minutes later I got a phone call. "Oh, we have a job offer for you in California."

HARWOOD: Really? So, you liked the media that day.

WENDT: Yeah. Now let me put it this way. There are media folks I liked, I worked with. And some people I don't like— And—because sometimes you would give interviews and what you said wasn't what you read. And the other one was, I had a CVT as a test supervisor by the name of Bill [William H.] Schick who was—he was the guy whenever VIPs came up—he had to come to the white room with them and things like that. He was a NASA guy. And he was great to work with. We had a system from 1 to 5. And—I have a visitor. "Oh, what is it?" "It's a 3." "Okay, ja. Bring him up in the afternoon." "Okay." I got one of the 5. "Any time." You know. "I got a 1." "Oh tell him we have a major test. We don't have any time." So we would classify them.

HARWOOD: And these were reporters. Reporter guests, or any guests?

WENDT: Any guest. I mean, sometimes they were a congressman. Sometimes they were—Let me tell you: I won't mention the name. But while we were on the Atlas Program, at that time the number two man on the Space Committee—Oh, that was funny, too. I mean, you can make it funny on the tape, too.

Here we are on the Atlas pad. And you know politicians always have what they call "photo opportunity." Lean on the spacecraft. Thirty reporters, they are taking pictures. And he leans on the spacecraft. I said, "Hey, stop the show!" One of the PAO [Public Affairs Office] guys jumps on me. He says, "What's the problem? We have permission to do that." I said, "No, there's a problem. I'd like to tell you." He says (but I couldn't get through)—he says, "Oh," he says, "we have permission. We're going to do that. Tell me what the problem is." I said, "Do you want me to tell you?" He said, "Yes." I said, "Senator, your fly is open!" "Oh!" Same senator, after that, I show him the spacecraft. And he says, "Now, my good man," he says, "where are the engines on this thing?" I said, "Senator, they are way down below." He says, "Oh you mean it goes up like this." "Yes, Senator." Number two on the Space Committee.

HARWOOD: But you don't remember his name.

WENDT: I wouldn't tell you the name. I know who it was. You'll probably know it, too. [Richard] Gephardt.

HARWOOD: So after, you know, Apollo—

WENDT: Okay. So then I went to Edwards for what was supposed to be 1 year, and then 2 years, and I was responsible for the Orbiter preparations for the test and for bringing it back… In other words, I had a—

HARWOOD: For Shuttle.

WENDT: Yeah, the Shuttle. Ja. The Orbiter.

HARWOOD: Right. I know.

WENDT: Right. Shuttle is the whole thing.

HARWOOD: Right.

WENDT: So okay, and—because the Air Force was very touchy about, you know, that we had ammonia on board and so on. We had to taxi by the thing plus the fact I had to go out and I had to—they had to do the flight control system—the ailerons and the rudder. But they couldn't see it. So when they were on the runway, just before takeoff, you know, we would give them a go ahead. We had to power up the APUs [Auxiliary Power Units]— which run on hydrazine. They're on—Ja, on hydrazine. And then we would do the 20 degree, 30 degree, you know, right rudder, left rudder, left rudder, and so on. And I would tell him that everything is okay. Then I would wait on the runway when they came back and see if we had any leaks and so on and clear them to go past the Air Force hangars to go back to our hangar. That was during the Shuttle Program.

HARWOOD: And those were, like, approach and landing tests?

WENDT: That was the so-called approach and landing test, ja. You remember where we took the Shuttle and we dropped it off the 747.

HARWOOD: What did you think, I mean? When you see, you know, such a different vehicle than what you were used to? I mean, what did you just think? That your career had spanned such technological development.

WENDT: I don't know. I never like to stand still. As a matter of fact, to be real honest, I was tired of doing back to the Moon. It was just more of the same. You want to do something else. You want to go farther— You want to do—You know, if you just do the same thing, I wasn't too great for that, to doing the same thing.

HARWOOD: Did you want to—I mean, you still worked for Rockwell when the first Shuttle launched. Did you—

WENDT: Oh yeah, I worked for them until [19]'89.

HARWOOD: I mean, what did you think when the first Shuttle launched in the early '80s? Did you want to—Did you say, Oh I want to get back in there? I noticed there was a picture that said Bob [Robert L.] Crippen said he looked forward to when you could strap him into the Space Shuttle.

WENDT: Yeah I know. Bob also flew in the approach and landing test.

HARWOOD: Right.

WENDT: But, no. By that time, there was some or other strong controversy between the top management and myself about—and—as a matter of fact, the local head of Rockwell said I would never make it back to the Cape. But then some way it got interfered with, and I was back at the Cape. So that was a little sideline. But I then wound up in the safety program, as I was looking at flight crew safety and developing procedures—for flight crew.

HARWOOD: But do you think that times had changed? I mean, I—you've talked about how you ran a pad operation.

WENDT: Right.

HARWOOD: Do you think the times changed and kind of—

WENDT: Yes.

HARWOOD: You wouldn't have fit in with the Shuttle being out there saying, "I'm running this at the pad."

WENDT: It got somewhat too big. And a lot of the criteria that I had established—were no longer valid. In other words, they were ignored. And they're still being ignored. And especially after the *Challenger* accident, there was an overkill, and there is an overkill on the paper trail. What I call the paper trail.

Where previously I was a firm believer: a contractor and a customer (NASA and a contractor) sign a piece of paper. And it is their tail and if something is wrong. Okay? Now we have eight people sign the piece of paper. The first one says, "Oh, I'll sign it because this

guy is going to look at it." The next group of people says, "Oh, these two guys looked at it and we'll sign it off." The next people, "Oh everybody looked at it. There's no problem here. Sign it off." And it comes out that sometimes nobody has looked at it. So I told that to Cripp [Crippen] one time. I said, "You know, it's—we're getting to a point where nobody is responsible for anything anymore. As a matter of fact, if something goes wrong, they form a committee." And if you can, I mean, that's—I think the launch card has 47 signatures on it, you know. But who is really responsible for it?

And I have great problems, even today, with the program. As a matter of fact, when [George W. S.] Abbey came up here, we had a meeting not too long ago. And I said, "You know, my problem right now is—I asked Cripp one time. I says, 'Here is 20 bucks. Let's go down to the space center and ask 10 of our employees here who is the manager of the Space Station. Our next big program. The biggest program NASA ever had. If three get the answer right you can keep my 20 bucks.'" He didn't take me up on it, because he wouldn't find three people.

So when we were at breakfast and I asked Abbey, I said, "You know, that's a problem. You guys don't do publicity." I said, "The people don't even know. I called the PAO officer and I said, 'Who is the present manager of the Space Station?' They didn't know." So Abbey says, "Oh, John, you know who it is" (John [W.] Young). He says, "No, I don't know." He says, "I told you this morning." He said, "Oh, you mean this guy. [Randy H.] Brinkley." "Ja," he said, "that's it." The number seven—the seventh guy on the Space Station in management, okay? "Now," I said, "How come I don't see him in Congress? How come I don't see him on TV? How come I don't see him on talk shows? How in the heck am I going to convince an average factory worker that he should supply the—should support the Space Station if nobody knows about it? They don't even know who it is or what it is or what it does. Do you do a lousy job of publicizing things!" Well, it's going to upset him. They're probably going to cancel that one out from the tape.

HARWOOD: They'll send a copy of this tape right up to George Abbey's office when they get home. During the Shuttle Program, you know, you had that—the high, obviously, of seeing this vehicle that you worked on in the test phase come to life and really, really work, you know. And then came *Challenger*. What was your—where were you when the *Challenger*—

WENDT: Right—I was right at the VAB [Vertical Assembly Building, KSC].

HARWOOD: Okay.

WENDT: Now, to begin with you need to understand: Even the first Shuttle flight, we had a heck of a time getting it off. I mean, we had so many problems with the Shuttle—and so on that we really had to work hard. And so on. And I was pretty much in the part of solving problems. And I got again criticized for talking directly to NASA and solving the problems—And they said, "Hey, you talk to NASA?" I said, "Yeah, we had a problem. I talked to the guy here. We agreed we could do it that way, so we did." "Oh, you shouldn't talk to him. I mean, if O'Malley hears about it, he's going to fly off the roof, you know." And see, I couldn't stomach that quite a bit.

There are people too much concerned with what the image is or what this is or what that is. It is not a coherent operation like we used to do it. In other words, right now if there is a problem we'd rather form a committee to solve the problem. I'd like to go back to the thing: You and I sign the paper, and it's our tail end if this goes up. Okay? Then you know you are responsible for it. I know I am responsible for it.

HARWOOD: What did you think when you watched *Challenger*? I mean, did you know right away?

WENDT: Yes, I knew when I saw it. I knew what—

HARWOOD: What did—

WENDT: I didn't know why it happened—when I saw it go bad.

HARWOOD: What did you think?

WENDT: And I immediately think about the people, and then you have some other thoughts because, see, I knew what can transpire in the crew compartment, okay? And what—later on I was on the investigation with it—And primarily crew activities and crew things. So I knew what actually happened.

And here again, I mean, there were about seven people of us who knew quite a bit. And we agreed we wouldn't talk, except to the families if they asked us. But then some joker eventually got a piece of paper and publicized it in the—on the press or so, which is ridiculous because there was—there were many unwritten laws. Because there were certain things you did not talk about. And now it is more or less: it's a job. You know, it's no longer the dedication. I mean the guy looked at it and [said], "Hey, man, it's a quarter to 4. Forget it," he says, "I'm going off at 4 o'clock." He doesn't give a damn what happens after 4 o'clock. There are not—I mean, there are some good people there.

I mean, don't get me wrong. But with all the layoffs, everybody worries about, "Oh man, if I say there is something wrong, hey, I'm going to get fired. Or if I do something wrong, I'm going to get fired." And you can't operate that way.

HARWOOD: Did—what do you think the impact *Challenger* had on just the morale of people that you worked with and—

WENDT: Well, it—the morale was that you could see the program really taking a big step back. Until you found out what went wrong. And then you had now the big discrepancy between the working people and the management people. Where does the work fit in? Where does the policy fit in? Where does the politics fit in? You know, and these people deciding when to launch and they are not technical people. There is a rift that you see developing.

I think in the early parts—when you talk about the early days, all the people were in it together. In other words, we were one bunch. You didn't care. You went to one meeting and it didn't matter. Everybody could lay things on the table. Now you had to worry about, "Hey, I got to protect my company. I'd better not say that." And, "I'd better not mention this because it could reflect badly." And somebody says, "Oh man, if I don't make the schedule I'm losing $500,000." So, you see, there are lots of things that bug the mind now. Even today, I was afraid that we would never get a go for launch. Because everybody was CYA [cover your ass], you know. So unless you can blame it on somebody else, don't say "You, yes." Don't say "Yes."

HARWOOD: Well, in your role in the safety organization with Rockwell, after *Challenger*, what role did you play after the accident?

WENDT: Oh essentially to begin with, I mean, I—After the accident I reviewed what findings we had. And I had them investigate some of those things to determine what was the chain of events, okay? What did the Orbiter do? The next one came up: Is there anything we

can do to prevent it in the future? Now one of the things that people even today do not realize: the Shuttle is a different bird than Mercury, Gemini, or Apollo is. If we ignite the main engines, if we ignite the solids, there is nothing we can do if something goes wrong. You cannot shut the engines down. You cannot eject the spacecraft. You cannot release the spacecraft. If that thing has a malfunction in the solids and they are returning to the beach, the range safety officer has no choice but to say, "Arm and destruct with all the crew in it." There is no way out. And I think that even what we call the beanpole system is like a pacifier. Because you have to meet so many requirements to make this thing work that only a very, very limited application maybe could use that system.

HARWOOD: Did you work on testing the crew escape system that came to be after *Challenger*? Were you—did you work on those tests?

WENDT: Yes. Yes. I witnessed a time test. We had two approaches. One of them was: Give each astronaut a rocket—that would blast him out. You see, the deal is where the hatch is located if you just jump out, you'd get hit by the wing or by the tail. So you had to get him away from it. So one of the things was to grab a little retrorocket pack and shoot their way out. Or the other one was just fly, and they do fly, with a parachute, and you have what we call a beanpole which gets you out and away from the wing area. But in order to do that, you have to be below 20,000 feet. The Shuttle has to fly steadily— That's the only time you can use it.

HARWOOD: A lot of what-ifs. Tell me—

WENDT: And you need at least 2 minutes for seven people.

HARWOOD: Tell me the story about the test with that pole, that you were in Houston and you—

WENDT: Well, that was just another one of those things—where I got involved in it because of the past experience. I don't want to dwell on it very much. That people says that I had done most of the—even during the Shuttle, the pad operations, the emergency egress test, I had written a lot of them and I had a conducted a lot of them— And we always would play different games. In other words, come up with a different scenario to make sure the crew had to respond to it correctly. That was one of the biggest things I did in the Shuttle Program, to worry about the egress test that we had. But that was only during pad operations. See? There is no—much you can do after your liftoff.

HARWOOD: Okay.

WENDT: And most people don't realize that either.

HARWOOD: The—did you leave Rockwell? I mean, in—did you retire after the return to flight?

WENDT: Oh I retired in [19]'89.

HARWOOD: Okay.

WENDT: Ja, ja. No, we had quite a few flights after that.

HARWOOD: Right. What would—what did you think, I mean—I assume you watched the return to flight right here from Florida. And what did you think then? That—you know, you'd gone through the Apollo 1 fire, not working for the company involved but you'd seen that and you'd seen the recovery from that. Did you think it would take 2 years to recover from *Challenger* before they'd fly again?

WENDT: Oh I would think yes. But the main things which bothered me was, all the help you got from politicians and non-technical people. In other words, there were so many restrictions, so many conditions put on which are unnecessary—that actually had became more of a hindering block than a contributing factor. So, even today it is—a lot of decisions are made more at the political level than at the technical level.

HARWOOD: When did you receive your Silver Snoopy Award? I see it hanging up there.

WENDT: Oh, John Young gave that to me. It was '87 or somewhere—'86 or '87, I'm not sure. I'll have to look at the date.

HARWOOD: And, you know, that award always means a lot because it's presented by the astronauts for kind of exceptional service. What did you receive it for?

WENDT: Yes. Well, it says right there.

HARWOOD: My eyes aren't that good.

WENDT: Okay. They realized that I contributed over many, many years to the safety of the flight crews and to the success of their operations. In other words, I did not have a scrub that

was blamed on us. I did not have a failure that was blamed on the pad operations and so on. So that was pretty much appreciated. And that was the reason that I was able to disregard a lot of rules and regulations, because I had a tremendous support from the flight crews. In other words, if I couldn't get through to some people I would just go to the flight crews. I says , "Hey, there is something you—there is a question you may want to ask at the flight readiness review and see what kind of an answer you get."

HARWOOD: What do you think is different about that relationship now between the folks who serve in your role now with the astronauts at the pad?

WENDT: They don't have the close contact anymore. I mean, they—right now you see the flight crews for egress test, for a CDDT [Countdown Demonstration Test], and for launch. See, all major test in Mercury and Apollo and Gemini were where the flight crew participated. See, you had a flight crew and you had a backup crew. You either saw one or the other. But it was a daily basis. They were here every day. Every time you ran a test, they were there.

In Mercury and even in Gemini, they went to the home plant and they watched the spacecraft being built. Once you were assigned to it—it became *your* spacecraft. And the same way, I mean, the technicians were very, very much attached to a spacecraft. See like for example, in Apollo we had one in the hangar and one on the pad. Now there was a lot of competition. I mean, these people, they said, "Don't you touch my spacecraft!" It was *their* spacecraft. See, and it was *their* crew. So it made quite a difference. Right now, once they fly, you don't see them anywhere. I mean, it's—maybe you see them on TV. There is—the interaction is not there anymore.

HARWOOD: I take it you don't think that's necessarily a good thing.

WENDT: No. I would have liked them—maybe there's a necessity with all the things that go on— The payload specialist. What I would have liked pretty much, the—at least the commander and the pilot and maybe the mission specialist, the three key people, that they would spend more time in the trenches. What I call "in the trenches."

HARWOOD: At the Cape.

WENDT: At the Cape, right. That's when—I mean, that's my own personal opinion.

HARWOOD: Do any stories about particular astronauts that kind of stick in your mind that you think, "Oh if future generations are looking at this tape, many years from now," you think, "boy they really need to know this story."

WENDT: No, I think the way—When I talk to young people, I like to—address schools and colleges and so on. And my bottom line right now is: They always say, "Okay, what's in it for us?" And I said, "Now you need to understand: Us old folks, we have built a Model-T Ford. I'm looking at you guys to come up with a Corvette." You see, I have—even—again that probably is going to come off the tape—I have a problem. If I go and address a civic club and somebody comes up and says, "Tell me, sir, the last launch was $400M. What did we as a taxpayer get for the $400M?" Now I have a hard time, even for NASA managers, to explain that to me.

So and when I have asked, and as a matter of fact we had a get-together again, relatively high-level people (I'm going to crank them again) from Washington [DC]. I said, "You know, you do a lousy job of publicity." I say, "What I'd like to see is for people that go out, talk to the media, and so on. I'd like to have right now a book that: '10 years of

Shuttle flight, how has it benefited the average Joe Doe?' Give me examples, and not what you see in the one book they publish, you know, the interface things. But," I say, "give me something" [coughs] "excuse me—that interests the housewife. Give me something that interests a guy in an office. A real estate agent. A banker. A car mechanic. That they understand what they got out of the spaceflights. I don't have that at my disposal. So you ask me to ask them to support a $30B/$40B Space Station. I don't have the background or the information to tell them what benefit they'll derive from it." And that's my gripe right now.

HARWOOD: When you look back over the history of the program—Yeah?

VOICE OFF CAMERA: We're 57 minutes.

HARWOOD: Okay. The—We were talking about the Shuttle and, in a way, the events of last October with John Glenn's flight really kind of take your career full circle. I mean, did you think back in the days of his Mercury flight that you'd ever see him fly on the Space Shuttle? And what did you think when that flight came about?

WENDT: Oh, we had joked about that. As a matter of fact, I had always time them, I said, "One of these days I'm going to stow away on an Apollo flight. And I had planned how I could do that. I knew all the inside. Wouldn't that be funny when you go up and says 'Houston, we have a problem. We've got one more guy up here—'" That would have been funny.

But, no, as a—I volunteered to go on a flight. And I told Chris [Christopher C.] Kraft [Jr.] one time, I said, "You know, since I was in the program so long and I was a primary

contact, I have a medical folder that big," I said, "if you ever need people to see what age does to them and you want to fly them, I'll gladly fly."

Because, as a sideline, whenever in the training session, even for Gemini and all before Apollo, when they had an open trainer time and they didn't have enough astronauts they would call on me and says , "Hey, would you like to fly?" You know, and I would go out at 1 o'clock in the evening and—or whatever it was. As a matter of fact, I made 22 landings on the Moon with Ed [Edgar D.] Mitchell in the Sea of Pons in the Apollo trainer. And I went—I flew Gemini missions with Pete Conrad. So, no, I would have gladly gone if they had—but I told them. I told Chris, I said, "If I would go, don't expect any work out of me. I'll just look out the window."

HARWOOD: Let's talk about a few stories that have become just legendary. First the story of how the saying came about, about—because of your last name. You said even your daughters, you know, "Where did Guenter Wendt?" Or—tell the story.

WENDT: Well, that's just a normal thing. That—Originally it was initiated on that Apollo 7 flight when Donn [F.] Eisele all of a sudden, it got quiet up there—and he started off. He says, "I wonder where the Guenter Wendt?"— So, and that's when it started to do—Wally liked it so much he mentioned it in many of his speeches. So that's where that one started really.

HARWOOD: Any funny stories that we haven't talked about or I didn't ask you about, because I don't know to ask you about that you think—

WENDT: Oh I don't know. I mean, there are so many of them that you just don't recall all of them. We had some real good time in the early games— As a matter of fact, one thing

that I talked—We had dinner together with Gene Cernan Saturday. And the one story that you will see in the paper, there, too, in his book [*Last Man on the Moon*] (he has just published a book), and that was: One night he was in quarantine for his flight, okay? And he wasn't supposed to leave the space center. But he had snuck out. I didn't know that. Slayton didn't know it. But it was in the middle of the night, or late in the evening, and I drive State Road 3 and I see a police car. Somebody is stopped. The highway patrol. So I look and there was Gene Cernan. I stop. And I say, "Officer, anything I can help you?" He said, "Oh," he says, "that guy has the most cockamamie story I ever heard. He said he's going to fly to the Moon. And," he said, "you know I had all kinds of things that people told me. He doesn't have an identification. He doesn't have a driver's license. He doesn't have the car papers. He says the car is a rental car." He says, "I don't quite believe that." So I told him, I said, "Yes," I said, "I know he is Gene Cernan. He will go the Moon." And so he finally let him go. He said, "You know the reason I let you go is not because I believe what you said. But," he said, "you give me the best story I ever heard. And you two guys sure work like a team." So—and then later on Gene says, "Whatever you do, don't ever tell Slayton about that!" Because he broke the rules here. He left the Cape. And he didn't have any identification on him.

HARWOOD: Unbelievable.

WENDT: So—

HARWOOD: Need a glass of water?

WENDT: Oh probably.

HARWOOD: That would probably help. Why don't we let him get it?

VOICE OFF CAMERA: And we're rolling.

HARWOOD: All right, the first one. When you look back over your career, what do you think? I mean, we were just talking about the what did the American public get out of the sacrifices that you made? You talked—you worked 7 weeks in a row once without a day off.

WENDT: I know, but—

HARWOOD: Your family sacrificed. What did we all get out of that? When—in your own words, what do you think it all meant? For our society, to have gone and done this.

WENDT: Now I would think in the overall pictures, we have advanced so many things in such a short time that the benefits, even if you don't—if you can't call them up individually, they are so great that you would never have anticipated it. Take for instance: Just think back 40 years or so. Did you envision you would have an airliner that could carry 500 people? Could you envision you make it from New York to Los Angeles in 5 hours? No, you couldn't. The best thing you saw was a DC-3 flying at 120 knots. So then the same way as, look at the people today. Everybody has a telephone. He's using wireless communications. Satellites, that you get your picture from all over the world today. These things people assume they are there. Do you realize we have more than a couple of thousand satellites in orbit right now? You can tell where you are. You can tell where you're going. And we have really made so many advances that isn't really connected with space.

But let me—let's just say, even your automobile today. A lot of these chips you have in—that run your car are the results of space technology! The medical things that you

have. Space technology! So, it isn't that obvious. But if you look back as to where you were 50 years ago, I never would have imagined that we could have set foot on the Moon or we could go ahead and talk to people. As a matter of fact, I can send today an e-mail to my friends in Germany and then within 2 seconds they have it over there.

Now we have made many, many things progress in that area. And I hope that we do make much more. But I'd also like to make it more Earth-beneficial (if you want to call it that way). There's great—I guess great prestige in proving certain theories about long durations or faraway places. But I think people are more interested in: What does it do for me, my children, and my grandchildren? And I think, if we can correlate it a little bit better like that, we would get all the more support.

HARWOOD: When you look back over your career, I guess the final question I want to ask you is: You know, you've heard how other people have described you, you know. The nicknames, you know: the dictator, the—But in your own words, how do you what to be remembered? How do you describe your role?

WENDT: Oh, I think I probably got my reward when I retired. They just about—all the people that worked for me told me I was not the most lovable character, but they always would like to work for me because I was fair and I was easy to work with in that regard. So, and for myself I said, I always set out to find a job I liked to do and then do it. It isn't work. It is really something you like to do.

When I used to go recruiting in colleges, I always told the graduates, I says , "Don't take a job because it pays well. Take a job you like because if you like what you're doing, you're going to be great at it." That's the way I like to look at it. I don't look at myself as being anything extraordinary. I was very, very fortunate enough, having survived World

War II, having coming over here, having found a job I like to do and got paid for it. So, I mean, what more can you ask? So I'm very happy.

As a matter of fact, a little side stories: Wernher von Braun became a good friend of mine. At one time early in the program I asked him, I said, "Wernher, I don't like rumors. And I have a rumor, and I'd like you to say Yes or No." He said, "What's the rumor?" I said, "Rumor has it that General Motors offered you $500,000 to come to work for them and you turned them down. True or false?" [phone rings] He said—

HARWOOD: Oops.

WENDT: Oh excuse me.

HARWOOD: We'll have to start—

VOICE OFF CAMERA: Okay. Recording.

HARWOOD: The last story. I just want—And actually I'll have you start. Tell me about the Guenter—I mean, tell me the story with Wernher von Braun.

WENDT: Oh.

HARWOOD: And that's the one.

WENDT: Okay. So I asked him, I said, "True or false?" He says, "True." He says, "They offered me $500,000 to come to work for them." And I said, "Now, wait a minute." I said, "You're making $36,000 a year." That was the highest pay for NASA at that time. "Why do

you turn a $500,000 job down?" And he says, "Guenter, what I dream to build no private company can afford. And I'd rather build my dream." So he turned them down.

Now, jumping a number of years. Before he passed away, we were again together on an award a contract show, and by that time I know he didn't have long to go. And he knew it. So I asked him. I said, "Wernher, are you sorry for something you wanted to do you didn't get done?" And he says, "Guenter," he says, "when I pass on, I'm the most contented person that ever will pass away because my dream became a reality. I go in peace." So that was a—I mean, he was a great guy. A photographic mind. I mean, I enjoyed working with him.

In a way he was a little bit also like somebody I know. We went to a meeting, a 3-day meeting, one time and there were 72 people in the conference room with nameplates nicely calligraphed. And we started the meeting. At lunchtime he says, "Gentlemen," (there were no ladies there at the time) "we'll break for lunch. Let it be known that anybody who was has not spoken to or addressed by the agenda, do not return for the rest of the meeting." Twenty-four people showed up after lunch.

HARWOOD: That was just his way.

WENDT: That was just—I mean, that's the same way. I mean, I used to go to meetings in the Shuttle Program. You make a statement and you said, "Okay, now, that's your company. Do this and this." "I'll have to talk to my management." So I finally—I said, "Hey, if you can't make a decision, don't bother to come to the meeting because there are 17 people now waiting for your decision. Send the damn guy who can make the decision." I can't stand that. And that's more and more today, you know? They don't make decisions. They palm it off on somebody else.

HARWOOD: Do any question that I didn't ask you about, because I don't know to ask you, that you think, "Oh we need to include this about you?" Or—

WENDT: No. No, I think I'll probably be—I was very, very fortunate to be there. And one thing we didn't talk about, I didn't mention, but—One of the things is: I was blackballed from going anywhere to Russia or the East countries because, after I got over here, I made lots of tape for Radio Free Europe and Voice of America. And my line always was that the Russians don't trust their own people. Here in America they trust somebody who was actively fighting them in World War II. And they find they trust him with the life of the astronauts. I says, "Can you duplicate that in Russia? No, you can't." So, and for that reason, whenever I went over to Germany, I had to sign up at the Consulate. Then they gave me 3 hours to fly to Berlin—and then I'd call back in. And so on and so on. And so I could never go to Russia at that time.

HARWOOD: Did you see the irony in the fact that, you know, you played such—this key role in protecting our biggest heroes of their time, and as you said, not that long ago earlier, you would have been viewed as the enemy?

WENDT: Yeah. I know. That's—But, you see, once you are in a war—It's a rather interesting thing. You meet the people that you fought against. They meet you. And we met them in prisoner camps and you find out—the war is really a stupid thing. The people that set you up for it, they are back there somewhere. And I always said here, even in the States, if anybody wants to declare a war all the senators that have been in frontline activities are the only ones allowed to vote on it. But that's my take on it.

HARWOOD: All right. Well, thank you very much.

WENDT: Okay. Thank you. Time to quit.

HARWOOD: Time to quit.

[End of Interview]