

ORAL HISTORY TRANSCRIPT

ALAN B. SHEPARD, JR.
INTERVIEWED BY ROY NEAL
PEBBLE BEACH, FLORIDA – 20 FEBRUARY 1998

NEAL: This is February 20, 1998. We're at the home of Alan and Louise Shepard in Pebble Beach, California. . . Alan, thank you for letting us be here with you to do this oral history.

SHEPARD: It's a pleasure, sir. It's a pleasure.

NEAL: Let's begin . . . not at the beginning, because there was a beginning before this, but does the date 9 April 1959 mean anything to you?

SHEPARD: Well, of course, that was one of the happiest days of my life. That was the day on which we all congregated officially as the U.S. first astronaut group. We had been through a selection process obviously previous to that time. But that was the day we first showed up officially as the first astronauts in the United States, back at Langley Field, Virginia.

NEAL: At Langley? Why Langley, I wonder.

SHEPARD: Well, of course NACA [National Advisory Committee for Aeronautics] had become NASA in a great, big hurried turnaround, as you recall. The program of astronaut selection and training basically was run by the people who worked from Langley. Originally, of course we all reported to Washington. That was where the initiation, the introduction, and the pre-selection, and all that sort of routine went on. Then, as you know, we had physicals elsewhere in the country. But once the selection was made we reported to those people at

Langley Field, which was kind of neat for me because I was already stationed in Norfolk in a job I didn't like in the first place. I was finally taken out of airplanes and put behind a desk for the first time in a bunch of years. . . . So it was a really easy trip for us. We . . . didn't even have to move.

NEAL: Your journey to get there took you through test pilot school, took you through combat experience, took you through a bit of everything, didn't it? Why was it that NASA decided to pick test pilots, of all things, to fly the first space mission?

SHEPARD: Well, I think that it was an immediate realization that we had essentially a new product. It didn't look very much like an airplane, but if you were going to put a pilot in it was going to have to fly somehow like an airplane, and . . . when you have a . . . strange new machine, then you go to the test pilots. That's what they were trained to do, and that what's they had been doing. Now, of course, NACA had some test pilots but they were a little bit older. None of them, I don't think, were in a position where they probably could have competed with the varied background of test flying which most of us had. And, so the decision was made. I don't know. They say that [President Dwight D.] Eisenhower had something to do with the decision because he said, "Well, yes, we need a test pilot," he agreed to that (NACA, NASA now, didn't have very many test pilots) "so let's go to the military and see what they have to offer." Now whether Eisenhower himself was involved in the decision, apparently the White House was to some degree.

NEAL: But, the point is of course, you were named. When first you sized up those teammates of yours, I wonder what your first reactions were to the group.

SHEPARD: [Laughing] I wondered first of all where these six incompetent guys came from. Seriously, it was not a surprise because several of them had been involved in the preliminary selection process, so I was generally familiar with their backgrounds. Glenn, of course, I had known before; Schirra I had known before because of our Navy connections. So I knew there was a lot of talent there, and I knew that it was going to be a tough fight to win the prize.

NEAL: It was competitive at that time between the seven of you, wasn't it?

SHEPARD: Well it was an interesting situation because, as I say, I was friendly with several of them. And on the other hand, realizing that I was now competing with these guys, so there was always a sense of caution I suppose—particularly talking about technical things. Now in the bar everything changed, but in talking about technical things there was always a sense of maybe a little bit of reservation, not being totally frank with each other, because there was this very strong sense of competition . . .

NEAL: You were talking about your teammates, and I'd like to go back over that. There was competition among the seven of you, wasn't there?

SHEPARD: Well, you know, it was an interesting situation getting together with the seven originals for the first time. And, of course, having known some of them before, with the Navy connections, but yet all of a sudden realizing that here was competition. There were seven guys competing for the first job, whatever that turned out to be. Seven guys going for that one job. So on the one hand there was a sense of friendliness and maybe some support,

but on the other hand, “Hey, I hope the rest of you guys are happy because I’m going to make the first flight.” [Laughter]

NEAL: You were about to move into a whole new world, or a new non-world, up there in weightless space of which nothing was known. Didn’t that frighten you just a little bit? What were your thoughts about moving into a new environment?

SHEPARD: I suspect my thoughts generally reflected those of the other chaps. But, with me I think it had to be the challenge of being able to control a new vehicle in a new environment. This is a generalization, but it’s something which I’d been doing for many, many years as a Navy pilot, as a carrier pilot; and believe me, it’s a lot harder to land a jet on an aircraft carrier than it is to land a LM [Lunar Module] on the Moon. That’s a piece of cake, that Moon deal! But that was part of my life, was the challenge. And here you had, yes, a new environment, but you know, for fighter pilots who fly upside-down a lot of the time, zero-gravity wasn’t that big a deal. Since none of us were medics we hadn’t thought about the long-term effects of zero-gravity, but the short-term effects of zero-gravity were not the challenge to us. The challenge was to be able to fly an unusual craft and provide good, positive, thinking control of that vehicle.

NEAL: So unusual a craft that there weren’t even any training devices or simulators that could simulate the kind of things you were going to do. You had to make them, didn’t you?

SHEPARD: Well, you know that’s exactly correct. In the early days we really had what we called “part-task trainers” instead of simulators. Something was built to indicate the control system; something else was built to indicate the radio systems or some of the

instruments. And they were all sort of separated, not the great, glorious simulators which we have today.

NEAL: What was the role of the astronaut in those devices?

SHEPARD: Well, I think that the role of simulators then, today, and tomorrow has to be: You're dealing with individuals who fly unusual aircraft, who conduct unusual experiments infrequently, because you don't fly in space every day. So there has to be the simulator, which . . . artificially creates problems for you to train against or train with, to learn how to overcome difficulties you may be having with your experiment, difficulties you may be having with the tail of the Shuttle or that sort of thing. So simulators are a very, very important part of space flight and they're also a very important part of commercial aircraft. Unfortunately, some of the companies today—the commuter companies—don't require simulator time, which is surprising to me. I think many of the pilots do it on their own. But simulators really are good because they create a sense of confidence in oneself. You go up . . . and the engine quits and you land safely; or you go up and the rocket goes sideways and you get out, come back home and do it again. So there's a lot of confidence created in the simulation business.

NEAL: Did you or the other astronauts take an active role in designing the spacecraft?

SHEPARD: Yes, we did, and we tried to do it as efficiently as we could. . . In the early days, with only seven, we assigned *an* individual to work directly with the contractor. And this was all with NASA's blessing, because the NASA engineers were there as well. But primarily from a pilot's point of view, is this handle in the right place? If you have a switch

which you have to use to counteract an emergency, is it reachable, is it visible, or do you have to go behind your back somewhere to find the darn thing? Primarily from a pilot's point of view was our interface.

NEAL: Then finally you wound up being the first man to fly in a Mercury spacecraft. Did you know that was coming or was it a surprise? Can you describe your steps that led up to it?

SHEPARD: . . . We had been in training for about 20 months or so, toward the end of 1960, early 1961, when we all intuitively felt that Bob [Robert R.] Gilruth had to make a decision as to who was going to make the first flight. And, when we received word that Bob wanted to see us at 5:00 in the afternoon one day in our office, we sort of felt that perhaps he had decided. There were seven of us then in one office. We had seven desks around in the hangar at Langley Field. Bob walked in, closed the door, and was very matter-of-fact as he said, "Well, you know we've got to decide who's going to make the first flight, and I don't want to pinpoint publicly at this stage one individual. Within the organization I want everyone to know that we will designate the first flight and the second flight and the backup pilot, but beyond that we won't make any public decisions. So," he said, "Shepard gets the first flight, [Virgil I. "Gus"] Grissom gets the second flight, and Glenn is the backup for both of these two sub-orbital missions. Any questions?" Absolute silence. He said, "Thank you very much. Good luck," turned around, and left the room. Well, there I am looking at six faces looking at me and feeling, of course, totally elated that I had won the competition. But yet almost immediately afterwards feeling sorry for my buddies, because there they were. I

mean, they were trying just as hard as I was and it was a very poignant moment because they all came over, shook my hand, and pretty soon I was the only guy left in the room.

NEAL: That's a priceless story, Alan. Finally things progressed to the point where you're getting ready for the flight. And if I'm remembering correctly there were some holds dealing with that day on the launch pad. Let's go back to that day, as you remember it. You're getting ready now for MR-3, as it was loosely labeled.

SHEPARD: Actually the checkout, the countdown had been running very, very well. Of course, [John H.] Glenn [Jr.] was the backup pilot and he'd been in on the pre-flight stuff. The Redstone checked out well. We had virtually no problems at all and were scheduled for, I believe it was, the second of May. And, I was dressed, just about going out the door when a tremendous rainstorm, thunderstorm came over and obviously they decided to cancel it, which I was pleased they did. It was rescheduled for 3 days later, and of course, went through the same routine. The weather was good, and I remember driving down to the launching pad in a van which was capable of . . . providing comfort for us with a pressure suit on and any last-minute adjustments in temperature devices and so on that had to be made; they were all equipped to do that. The doctor, Bill [William K.] Douglas, was in there. We pulled up in front of the launch pad, of course, it was dark. The liquid oxygen was venting out from the Redstone. Searchlights all over the place. And I remember saying to myself, "Well, I'm not going to see this Redstone again." And you know, pilots love to go out and kick the tires. It was sort of like reaching out and kicking the tires on the Redstone because I stopped and looked at it, . . . looked back and up at this beautiful rocket, and

thought, “Well, okay buster, let’s go and get the job done.” So I sort of stopped and kicked the tires then went on in and on with the countdown.

There was a time during the countdown when there was a problem with the inverter in the Redstone. [L.] Gordon Cooper [Jr.] was the voice communicator in the block house. So he called and said, “This inverter is not working in the Redstone. They’re going to pull the gantry back in, and we’re going to change inverters. It’s probably going to take about an hour, an hour-and-a-half.” And I said, “Well, if that’s the case then I would like to get out and relieve myself.” We had been working with a device to collect urine during the flight that worked pretty well in zero-gravity but it really didn’t work very well when you’re lying on your back with your feet up in the air like you were on the Redstone. And I thought my bladder was getting a little full and, if I had some time, I’d like to relieve myself. So I said. . . . , “Gordo, would you check and see if I can get out and relieve myself quickly . . . ?” And Gordo came back . . . , I guess after there were some discussions going on outside—it took about 3 or 4 minutes—and finally came back and said [in a German accent], “No, he says; [Wernher] von Braun says, ‘The astronaut shall stay in the nosecone.’” So I said, “Well, all right that’s fine but I’m going to go to the bathroom.” And they said, “Well, you can’t do that because you’ve got wires all over your body and will have short circuits.” I said, “Don’t you guys have a switch that turns off those wires?” And they said, “Yea, we’ve got a switch.” So I said, “Please turn the switch off.” Well, I relieved myself and of course with a cotton undergarment, which we had on, it soaked up immediately in the undergarment and with 100% oxygen flowing through that spacecraft, . . . I was totally dry by the time we launched. But somebody did say something about me being in the world’s first wetback in space. [Laughter]

NEAL: At that time the whole game was totally competitive, not alone among the seven astronauts, but you were in a race for space with the Russians. They kind of beat you to the punch, didn't they? I'm thinking of Yuri Gagarin when I say that.

SHEPARD: . . . That little race between Gagarin and me was really, really close. Obviously, their objectives and their capabilities for orbital flight were greater than ours at that particular point. We eventually caught up and went past them, but as you point out it was the Cold War, there was a competition. We had flown a chimpanzee called Ham in a Redstone-Mercury combination, and everything had worked perfectly except there was a relay which at the end of the powered flight was supposed to eject the escape tower, because it was no longer needed, separate it from the Mercury capsule and eject it. For some reason with Ham's flight, it fired but it did not separate itself. So the chimp was lifted to another 10 or 15 miles in altitude and another 20 or 30 miles in range. There was absolutely nothing . . . else wrong with the mission. So our recommendation, strongly, was, "Okay, let's put Shepard in the next one. Everything worked fine, so if the thing happens again, no big deal. Shepard goes a little higher." Wernher said [in a German accent], "No, we want everything absolutely right." So we flew another unmanned mission before Gagarin flew, then his flight, and then mine, so it was really touch-and-go there. If we'd put me in that unmanned mission, we would have actually flown first. But it was tight.

NEAL: In retrospect it doesn't seem that important, but at the time I guess it was.

SHEPARD: Oh very important; absolutely, absolutely.

NEAL: How important was it? Did you say anything publicly, or did you just nurse your wounds and get ready to fly again?

SHEPARD: As you know, we had a lot of differences of opinion about things in the program. Not only the design but in some of the scheduling, but most of that was kept pretty quiet. Most of it was resolved, and very little of that came out in public. It was always . . . sort of a joint decision.

NEAL: Then, as time went on you started lobbying for another flight in Mercury, but then Mercury was cut a little short because there was the pressure of something else, wasn't there? Can you discuss those pressures?

SHEPARD: You are not surprised that I wanted to fly again, are you, Mr. Neal?

NEAL: Not at all.

SHEPARD: After Cooper finished his day-and-a-half orbital mission there was another spacecraft ready to go. My thought was to put me up there and just let me stay until something ran out; until the batteries ran down, until the oxygen ran out, or until we lost a control system or something. Just an open-ended kind of a mission. And, so I recommended that and they said that they didn't expect to hear anything else from me. But I remember when Cooper and his family and the other astronauts and families were invited to the White House for cocktails with Jack [President John F.] Kennedy, and we stopped at Jim [James E.] Webb's house first and had a little warm-up there, and I was politicking with Webb and I said, "You know, Mr. Webb, we could put this baby up there in just a matter of a few weeks; . . . it's all ready to go. We have the rockets. Just let me sit up there and see how long it will

last, get another record out of it.” Well, he said, “No, I really don’t think so. I think we’ve got to get on with Gemini.” And I said, “Well, I’m going to see the President in a little while. Do you mind if I mention it to him?” He said, “No, but you tell him my side of the story, too.” So I said, “All right.”

So, we got over there and we were all sipping our booze, getting some of our taxpayers’ money back drinking at the White House, and I got Kennedy aside and said, “There’s a possibility we could make another long-duration Mercury flight—maybe 2, maybe 3 days—and we’d like to do that.” He said, “What does Mr. Webb think about it?” I said, “Webb doesn’t want to do it.” So he said, “Well, I think I’ll have to go along with Mr. Webb.”

NEAL: It made you realize who was the power behind the throne.

SHEPARD: At least I tried.

NEAL: So instead you started then getting ready to fly in Gemini, another whole new ballgame.

SHEPARD: . . . Yes. It was very fortune I was chosen to make the first Gemini mission. Tom Stafford, who is a very bright young guy, was assigned as co-pilot, and we were already into the mission, already training for the mission. We had been in the simulators, as a matter of fact, several different times. I’m not sure whether we’d looked at the hardware in St. Louis or not prior to the problem which I had.

The problem I had was a disease called Ménière's; it is due to elevated fluid pressure in the inner ear. They tell me it happens in people who are Type A, hyper, driven, whatever. Unfortunately, what happens is it causes a lack of balance, dizziness, and in some cases nausea as a result of all this disorientation going on up there in the ear. It fortunately is unilateral, so it was only happening with me on the left side. But it was so obvious that NASA grounded me right away, and they assigned another crew for the first Gemini flight. So there I was, what do I do now? Do I go back to the Navy? Do I stick around with the space program? What do I do? I finally decided that I would stay with NASA and see if there wasn't some way that we could correct this ear problem. Several years went by, there was some medication which alleviated it, but I still couldn't fly solo. Can you imagine the world's greatest test pilot has to have some young guy in the back flying along with you? I mean, talk about embarrassing situations! But as a matter of fact, it was Tom [Thomas P.] Stafford who came to me and said he had a friend in Los Angeles who was experimenting correcting this Ménière's problem surgically. And so I said, "Gosh that's great. I'll go out and see him." So he set it up. I went on out there. The fellow said, "Yeah, we do. What we do is we make a little opening there, put a tube in so that it enlarges the chamber that takes that fluid pressure, and in some cases it's worked." And I said, "Well, what if it doesn't work?" And he said, "Well, you won't be any worse off than you are, except you might lose your hearing. But other than that . . ." So I went out there under an assumed name.

NEAL: What was the name?

SHEPARD: It was Poulos, I think. Victor Poulos. The doctor knew and the nurse knew, but nobody else knew . . . So, Victor Poulos checks in and they run the operation . . . it's not

that traumatic, obviously, because after about a day I was out of there. Of course it was obvious when you look at the big ball of stuff over my ear when I get back home. But NASA started looking at me. And several months, several months, several months went by, and finally said, "Yes, all the tests show that you no longer are affected by this Ménière's disease." So there I was, having made the right decision.

NEAL: I think we'd better backtrack a little here, because obviously this is going to bring you into direct discussion about a fellow named Deke [Donald K.] Slayton, and we haven't established the fact that Deke, like you, was knocked out of flying. So let's go back over a little of that, particularly because that happened back in the Mercury days when Deke was getting ready to fly, and I wonder, when you first heard [about Deke]?

SHEPARD: Deke had already been assigned to follow John. . .

NEAL: And suddenly he got bumped from his Mercury flight. That was a heart condition, wasn't it?

SHEPARD: Yeah, there was a lot of controversy about that because it was a heart murmur or a palpitation, some irregularity, but one which was not obvious. It was not a continuous kind of thing. It was not as if he was getting ready for cardiac arrest or anything like that. It was just occasionally he'd have a little twitch down there. . .

NEAL: . . . It was a real blow. I wonder what your reaction was to it at the time, and if you can give us a little background on it.

SHEPARD: Well back in those days, as we have discussed before, we were still highly competitive. There were still seven guys going for whatever flight was available next. And Slayton had been chosen to make the second orbital mission after Glenn when he had this little heart murmur. As I say, it wasn't anything real noticeable. I mean, it wasn't continuous. It just showed up once in a while. But yet it made the medics very nervous, and even after fairly exhaustive tests showed that it was not repetitive to the point where it would have interfered with the mission there was still a sense of, "Well, we just can't take a chance on anything, on the hardware or the astronauts." So he was grounded. Flat grounded. And at that point the feeling of competitiveness with Deke turned into one of camaraderie, one of feeling sorry for him. A sense of, "Let's get you back on the schedule, old buddy, somehow." Because you really felt sorry for him at that point because he no longer was competitive. But on the other hand, to have a guy in that position, and knowing how tough that could be to him. So he was grounded. Obviously, the benefit for us was to have . . . some one of us who could immediately become a spokesman, because he had decided to stay on. I think he'd resigned his Air Force Reserve at that point. I'm not sure, but I think so. Anyway, somebody who could speak for the group and not . . . have to worry about some of the ins and outs of training. So it was an obvious advantage to have him as a leader and as a spokesman of the group.

NEAL: And, so he became, what, Chief of the Astronaut Office? What was his title?

SHEPARD: Well, I think yeah sort of , Chief of the Astronaut Office.

NEAL: That was a job eventually you wound up with, by title.

SHEPARD: Yeah, things were changed around, of course.

NEAL: Once you went into Gemini all of a sudden there were two of the seven who had been grounded, Deke and Al. What a team. How did it come about that you wound up becoming Chief of the Astronaut Office while Deke, by this time, had assumed quite some power as Head of Astronaut Affairs?

SHEPARD: Well, as I'd indicated earlier, I decided to fight this Mérière's to stay with NASA. And during the time period when I was grounded, I could become very, very useful in the astronaut training business. I suppose that we really had grown if you'd consider the number of chaps that were involved in the simulators, for example, in the suiting procedures, taking care of the suits and so on, direct supporting the facilities for the astronauts; there were really quite a number of people involved. So they decided to make it a separate division. Deke was the head of that division, and I was given the job specifically of the care and feeding of these astronauts, in charge of their training, helping Deke with crew assignments, that sort of thing.

NEAL: Was it Deke primarily that got you the job, or was it just the fact that you had all the qualifications? How did that work?

SHEPARD: Well, I think it was just a matter of saying, "What do we need?" When I became grounded and informed NASA I was going to stay there, then we had two guys that really . . . either one of us could have done the job. One little difference I think, perhaps that I knew that somehow something was going to happen soon with me. I was either going to get the ear fixed or I was gone. With Deke, I think he was more or less resigned at that stage

to the heart murmur business, and the medics kept giving him a bad time about that. So I think it was really that Deke probably was more of a long-term commitment than in my particular case, so I think that's really why it was established. You know we just talked it over with [Christopher C.] Kraft [Jr.] and Gilruth and they sort of agreed that I was a good selection.

NEAL: You two had quite a reputation for running a very tight ship.

SHEPARD: Well, of course Deke and I were both mad because we were grounded. We'd both been training as astronauts. We knew where every skeleton was in the whole process, and we just wouldn't let those guys get away with anything. We knew what they had to do, we knew how they had to do it, and if they weren't doing it then we would bring them in and tell them about it. Maybe I was a little more forceful than I would have been normally, because of being grounded. I believe they called me The Icy Commander or some "friendly" term like that. . .

NEAL: Steely-eyed?

SHEPARD: We knew where all the skeletons were.

NEAL: Knowing that, in a very peculiar way from a NASA point of view, perhaps it was for the betterment of the space program that you and Deke were both doing what you were doing at the time you were doing it. Did you ever think of that?

SHEPARD: I think certainly there was a need for coordination, there was a need for representation at the executive level. Other chaps could have done the job perhaps equally as well or perhaps even better. But it seemed like we turned out some pretty good crews.

NEAL: I don't think anybody could fault your selection of crews, Alan. All the way through the Gemini Program and finally on into Apollo. And it was during the time of Apollo by which time you finally located through Stafford's ministrations, as you described earlier, a way to treat the Ménière's syndrome in Los Angeles. Suddenly the skies opened again for Alan Shepard. Or did they? You had to get back into the program, didn't you?

SHEPARD: Well, of course, when NASA finally said I could fly again, I went to Deke and said, "We have not announced publicly the crew assignment for Apollo 13. I have a recommendation to make." I had picked two bright, young guys—one of them a Ph.D., and one of them a heck of a lot smarter than I was—and made up a team to go for an Apollo flight. I said, "I would like to recommend that I get Apollo 13, with Stu [Stuart A.] Roosa as command module and Ed [Edgar D.] Mitchell as lunar pilot." Deke said, "I don't know. Let's try it out." So we sent it to Washington, and they said, "No, no way." So we said, "Now wait a minute. Shepard's got to be at least as smart as the rest of these guys, maybe a little smarter." And they said, "Well, we know that. But it's a real public relations problem. Here this guy's just gotten un-grounded and all of a sudden, boom!, he gets premier flight assignment." So then the discussion went on for several days and finally they said, "All right, we'll make a deal. We'll let Shepard have Apollo 14. Give us another crew for Apollo 13," and so that's what happened.

NEAL: Oh and did it ever! Suddenly Apollo 13, on its way to the Moon, ran into huge problems. I wonder what you thought when the problem developed, and what did you do during that time period?

SHEPARD: Well, of course the immediate thought was, “How do we get these guys back?” Obviously right from the start it was the end of a landing mission; no question about that. But it was interesting to see the entire system being flushed out, being made to come back with any kind of a recommendation. And of course, Chris Kraft and Gene [Eugene F.] Kranz were the guys that held everybody together on this thing and said, “Look we’ve got to find a way to bring these boys back. Failure is not an option.” And as you well know, the whole system was vibrating. In any corner of the manufacturing processes, the vendoring processes, NASA’s people, everybody was working toward a solution for this problem. As it turned out, there was more than one solution. I mean several different areas of engineering had to be addressed and corrected. And I think it’s probably NASA’s finest hour, when you think about it. Certainly from a pilot’s point of view, it was just as important an event as stepping on the Moon on Apollo 11.

NEAL: You had the next flight. Did you approach it with fear and trepidation, or did you approach it with the knowledge that you probably were going to make a pretty good flight out of it, thanks to what had been learned from Apollo 13? Which way was it?

SHEPARD: Well, . . . I know people have expressed the opinion that it might have been a little more dangerous to fly on Apollo 14 than it would have been had there not been Apollo 13. But, recognize that almost a total redesign had to be done; well not necessary redesign but a total reassessment of the package had to be done, to find out specifically why the thing

blew and to fix that, to look for similar situations throughout the service module, but again to reassess the whole scheme of things. You know, in missions like that where you're in basic research there are always decisions along the way; that well, maybe we should fix this particular piece of equipment because the chances it might fail are 1 out of 100. On the other hand, it's only a small part of a huge process scheduled to go at a certain time, and if this fails we have the crew to back it up. There're always these little decisions to make, so obviously part of the assessment process of Apollo 13 had to be to go over those decisions again now did we had the time to make some corrections of those 1-in-100 chances of failures? And of course several were made in addition to the corrections of the basic problem. So there was a feeling of security, and we were obviously a part of the process.

NEAL: By that time, too, I had forgotten you had been through the trauma of Apollo 1 and the fire and the redesign that that occasioned. Let's go back over that for a moment or two.

SHEPARD: Yeah, talk about feelings.

NEAL: Because that must have been a tough one.

SHEPARD: Well, of course Apollo 1 came as a real shock, no question about it. It came as a shock because it was unexpected, and I'll get into the reasons for it being unexpected a little bit later. But to lose a crew in a ground test, while they're still sitting there on the ground, to lose a crew really woke everybody up. And that was important, because all of us, every single one of us—and Deke and I discussed this, unfortunately after the fact—but we were part of a group that had gone through Mercury, had gone through Gemini, man, we thought, we're leading! We're beating the Russians! We thought nothing could go wrong.

And it led to a sense of false security, no question about it. Deke and I remember talking about it. Gus would come back and he'd have a complaint about this. He said, "This is the worst spacecraft I've ever seen." He complained about that. And of course he was complaining to engineers as well as to Deke and to me. But Deke and I insidiously became part of the problem because we said, "Okay, Gus, go ahead and make a list of this stuff and we'll see that it's fixed by the time you fly." Not that, "We'll see it's fixed before they stick you back in there for a test where you're using 100% oxygen." You see, there was that sense of security, a sense of complacency that everyone had—including myself and including Deke. I think some people felt that sense of responsibility and neglect, bad decisions, more than others and were personally affected by it more than others. But I don't believe there were more than just a few hardheads that didn't feel in the long run that they were part of the problem.

NEAL: As it worked out, perhaps because of Apollo 1, Apollo went on to be a hugely successful series of flights.

SHEPARD: Oh yeah. I don't think there's any question about the fact that the Apollo 1 fire did shape up the whole system, did make people realize that they had been too complacent, that they were over-confident, and it resulted of course in a total redesign of many of the parts of the spacecraft and, I'm sure, contributed to what was a very highly successful [program]. You know, we're still basic researchers, still putting people on the Moon and you do it six times and you only miss once. I mean that's incredible.

NEAL: And the one time you got the people back.

SHEPARD: Got the people back. . .

NEAL: . . . Let's go back in time a little bit more to some of the older history, because you were really there when the flight to the Moon was born. Wasn't that right about the time following your first, very successful sub-orbital mission? Tell us about it.

SHEPARD: Well, you know it's an interesting thought, and I've heard it expressed a few times, and that is the decision Jack Kennedy made to go to the Moon was made after we only had 15 minutes of total space flight time. A lot of people chuckle and say, "Sure!" But the fact of the matter is that, that is true. And this is how it happened: We were invited back to Washington after the mission, and I got a nice little medal from the President, and which by the way he dropped. I don't know whether you remember that scene or not, but Jimmy Webb had the thing in a box and it had been loosened from its little clip, and so as the President made his speech and said, "I now present you the medal," and he turned around and Webb leaned forward, and the thing slid out of the box and went to the deck, and Kennedy and I both bent over for it. We almost banged heads. Kennedy made it first . . . and he said, in his damn Yankee accent, . . . "Here, Shepard, I give you this medal that comes from the ground up." [Laughter] Jackie [Jacqueline Kennedy] is sitting there, she's mortified and said, "Jack, pin it on him. Pin it on him!" So he then recovered to the point where he pinned the medal on and everything was fine, and we had a big laugh out of that. But originally Louise and I were supposed to proceed to the Congress after the White House ceremony and then . . . have a reception, and then leave town. But Jack said, "No, I want you to come back to the White House, have a meeting, and let's talk about your flight." So we had the reception at the [Capital] Hill, drove back, in the Oval Office there were the heads of NASA

there and the heads of the government. Jack, of course, was there; and [Vice President] Lyndon [B.] Johnson was there.

And there's a picture of me sitting on the sofa, Jack is in the rocking chair, and I'm telling him how I was flying the spacecraft, and he's leaning forward listening intently to this thing. We talked about the details of the flight, specifically how man had responded and reacted to being able to work in a space environment. And toward the end of the conversation he said to the NASA people, "What are we doing next? What are our plans?" And they said, "There were a couple of guys over in a corner talking about maybe going to the Moon." He said, "I want a briefing." Just 3 weeks after that mission, 15 minutes in space, Kennedy made his announcement: "Folks, we are going to the Moon, and we're going to do it within this decade." After 15 minutes of space time! Now, you don't think he was excited? You don't think he was a space cadet? Absolutely, absolutely! People say, "Well, he made the announcement because he had problems with the Bay of Pigs, his popularity was going down." Not true! When Glenn finished his mission, Glenn, Grissom, and I flew with Jack back from West Palm to Washington for Glenn's ceremony. The four of us sat in his cabin and we talked about what Gus had done, we talked about what John had done, we talked about what I had done. All the way back. People would come in with papers to be signed and he'd say, "Don't worry, we'll get to those when we get back to Washington." The entire flight. I tell you, he was really, really a space cadet. And it's too bad he could not have lived to see his promise.

NEAL: When he first made that announcement, what was your personal reaction?

SHEPARD: Oh, we were delighted, we were delighted! But there was also a little bit of a gulp in there, because he put a time cap on the deal. I don't think that any of us thought that we would be able to make it . . . (that was 1961) within 8½ years. . . [We were] delighted but . . . maybe the President is a little enthusiastic.

NEAL: We've finally got up to that point where we're into Apollo, and what was your choice—your and Deke's—what was your best bet as to which would be the first flight to make a manned landing on the Moon?

SHEPARD: Well, I suppose that we felt the schedule as it was laid out, after we rescheduled the Apollo 8 mission, I think that we felt that the missions 9 and 10 adequately demonstrated the lunar module's capabilities, that we really deep down inside felt that we could make it. We had a very good possibility of making it on the first try.

NEAL: And of course you did.

SHEPARD: Of course we did.

NEAL: And then along came 14. . . Because now you had picked your team and you had sweated out Apollo 13, and you were ready to fly. It must have been a big moment when you were ready, waiting for take-off.

SHEPARD: Well, I think that in retrospect, the obvious advantage here was that Apollo 13 gave us more time to train, no question about it; not that we would not have had enough. But, it gave us a little higher level of comfort with that extra training time. I think obviously the changes to the spacecraft were good ones; not only the changes which related directly to

the explosion but others that were made as well. There was a lot of confidence. As I said, I picked a couple of bright guys to go along with me, and there was really a lot of confidence. Gene Cernan of course was my backup. There's a funny story about Cernan:

We were at the point, I think we were approximately 4 or 5 days away from scheduled lift-off, we were all in quarantine of course at the Cape—at that time we had to do 21 days before, 21 days after routine because of the bug stuff—and [Eugene A.] Cernan was out early in the morning flying a helicopter, because all the commanders used helicopters to train for the last few hundred feet of the landing. We were having breakfast and we knew Gene was up flying a helicopter, and all of a sudden the door opens and in walks Cernan. He is absolutely covered with soot. He's got scars on his face. We said, "Cernan, what happened?" He had been flying the helicopter over the river, which was absolutely calm that early in the morning—like a mirror—and he had been distracted by something or other because he was looking at the land instead of the water. He flew that helicopter right into the water, nose over, blades all over the place, tail rotor blades all over the place, fire because the gas tanks or saddle tanks on that dinky little chopper, they split, and there was fuel all over the place. Cernan is going down like this. And of course being a good Navy-trained pilot, he knew how to cope with being under water. So he got out and he swam to the top and realized he was in fire, so he splashed around and took a big, deep breath and swam a while; and came up, then splashed around some more and swam a while. He finally got out of the smoke and flames and all that stuff. Somebody had seen the crash obviously, because the Banana River isn't that big a deal. But he came on the shore, came out and there he was, and just totally bedraggled. So he looks at me as my backup pilot and said, "Okay, Shepard, you win. You get to go." [Laughter]

NEAL: . . . Alan, you're now on the Moon. You've gotten there on Apollo 14. I wonder what your feelings were the moment you landed.

SHEPARD: Would you like me to tell you the story about how I got there first?

NEAL: Oh yes, of course.

SHEPARD: ... Actually, the flight had gone extremely well. We'd had one or two docking problems earlier, a problem with something floating around in the abort switch, which closed as if we were pushing the abort switch closed. All of these were taken care of. Now we're on our way down, flying up on our backs... with the engine point that way, slowing down, and getting gradually more steeper and more steeper. We had a ruling that the computer had to be updated by the landing radar; reason being is that while you're on your back obviously you can't see the ground, you can't see the mountains, you can't see the rocks, or anything. So we had a rule that said if the landing radar was not updating the computer by the time you were down at a level of about 13,000 ft, then you have to abort; you have to get out of there. Well, the landing radar wasn't working... They called us up and said, "Your landing radar is not working." We said, "Thank you very much, we're aware of that." And then a little bit further on they said, "You know what the ground rule is about aborting if you're not at 13,000 ft." Well, yeah we knew that. Finally some bright young man over in the [control center] said, "Hey your landing radar is working, but it's locked up on infinity. Have them pull the switch, reset it, and see if it works." So we pulled the circuit breaker, put it back in, and sure enough the landing radar came on. And shortly after that we got cleared to land with a margin of 1,000 ft or so, which was a close thing. As soon as we pitched over there was beautiful Fra Mauro, just the way I had seen it hundreds of times from

the scale model. We came on down, made a very, very soft landing. As a matter of fact soft enough so that even though we'd landed in a slight crater ..., the uphill leg didn't crush like it was supposed to. We had crushable material in the lining. It was a slight ring wing down perfect landing. We shut off the switches and Ed Mitchell turned to me and said, "Alan, what were you going to do if the landing radar had not been working by 13,000 feet?" I looked at him and I said, "Ed, you'll never know."

NEAL: Well, there you were...

SHEPARD: I would have gone down. I'd come that far. You see, Ed for example had not been in the landing simulator at all. It was my job to land. And I'd done hundreds of these things. I knew that if I could see the surface, man, I could get down, maybe not exactly where we were supposed to but I could get down close to it.

NEAL: And so you would have made the landing under any circumstances? You'd have broken the mission rules?

SHEPARD: I would have at least been able to take a visual look. I would have pitched over and taken a visual look before and then made a decision.

NEAL: Fair enough. Well, we finally have you on the Moon. Mission accomplished. Or was it? Tell me about what you and Ed did on the Moon as you remember it. What were the highlights?

SHEPARD: ... Of course the first feeling was one of a tremendous sense of accomplishment, I guess if you will. A tremendous sense of realizing that, "Hey, not too

long ago I was grounded. Now I'm on the Moon." There was that sense of self-satisfaction immediately. But then that went away, because we had a lot of work to do. But I'll never forget that moment. Another moment which I will never forget is after Ed had followed me down and we had set out some of our equipment, taken the emergency samples, we had a few moments to look around, to look up in the black sky—a totally black sky, even though the Sun is shining on the surface it's not reflected, there's no diffusion, no reflection—a totally black sky and seeing another planet: planet Earth. Now planet Earth is only four times as large as the Moon, so you can really still put your thumb and your forefinger around it at that distance. So it makes it look beautiful; it makes it look lonely; it makes it look fragile. You think to yourself, just imagine that millions of people are living on that planet and don't realize how fragile it is. I think this is a feeling everyone has had and expressed it in one fashion or another. That was an overwhelming feeling in seeing the beauty of the planet on the one hand but the fragility of it on the other.

NEAL: Being Alan Shepard, of course, shortly after that golden moment you decided to play a little golf.

SHEPARD: I didn't decide to play a little golf. That is a long story. I will not tell the whole story.

NEAL: Tell us what you think might be all right, because it is a very famous story and I'm sure a lot of people would like to hear your version of it.

SHEPARD: Well, as you know, so far I'm the only person to have hit a golf ball on the Moon. Probably will be for some time. And being a golfer, I was intrigued before the flight

by the fact that a ball with the same club head speed will go six times as far. Its time of flight—I won't say "stay in the air," because there's no air—its time of flight will be at least six times as long. It will not curve, because there's no atmosphere to make it slice. And I thought, "What a neat place to whack a golf ball!" Well, when I told Bob Gilruth to tell him I wanted to hit a couple of golf balls, [he said] there was absolutely no way. I explained that it was not a regular golf club; it was the handle that we use that we pulled out with a scoop on the end to scoop up samples of dust with. That was already up there to be thrown away. Then we had a club head which I had adapted to snap on this handle and two golf balls, for which I paid: the two golf balls and the club at no expense to the taxpayer. The thing that finally convinced Bob was when I said, "Boss, I'll make a deal with you. If we have screwed up, if we have had equipment failure, anything has gone wrong on the surface where you are embarrassed or we are embarrassed, I will not do it. I will not be so frivolous. I want to wait until the very end of the mission, stand in front of the television camera, whack these golf balls with this makeshift club, fold it up, stick it in my pocket, climb up the ladder, and close the door, and we've gone." So he finally said, "Okay." And that's the way it happened.

NEAL: In full view of a huge worldwide audience of millions of people, who have never forgotten to this day. Alan Shepard is still perhaps best known as the guy who played golf on the Moon.

SHEPARD: Well, it was designed to be a fun thing. Fortunately, it is still a fun thing. The makeshift club is with the U.S. Golf Association in their museum. There has been absolutely no commercialism. One company tried to say it was their golf ball, and we cut them off very quickly. So, it's been just a totally fun thing.

NEAL: And still is. Now some general questions, if we may. Well, I guess we'd better get you back from the Moon. We can't just leave you up there. You played golf; now you closed the hatch and you came back. After that, it wasn't too long thereafter that you finally decided you'd completed your run with NASA. You moved on to other fields.

SHEPARD: Well, as you recall, of course, the only scheduled missions were the Skylab missions. The crews were already assigned to the joint mission with the Soviets...

NEAL: Including your friend Deke Slayton. Deke finally got his shot at it, didn't he?

SHEPARD: Boy, we were so pleased. We were so pleased, bless his heart. Can you imagine having to learn to speak Russian to go into space? I mean, that is above and beyond the call of duty. But he did it. I'm not sure the Russians understood him, but he did it. We were really so pleased and so happy for him.

NEAL: I'm remembering you were with me on television, because you were doing a job as a consultant, on-the-air talent when the landing was accomplished, and we were thinking, "My, Deke and Brand and Stafford, they all look great!" Little did we know that they had been dosed with nitric acid, was it? Do you remember after the fact that they had inhaled something or the other?

SHEPARD: Some kind of vapors.

NEAL: Some vapors from the ejection system, and they were in kind of bad shape for a short while.

SHEPARD: I've forgotten whether it was a leak or what happened. We can look it up.

NEAL: We'll forget it for now because it's unimportant. That's their flight; their stuff. General thoughts then. John Glenn is about to fly again. You and he are pretty close to the same age. I wonder what your thoughts are about John flying.

SHEPARD: John is a couple of years older than I am; I believe he's seventy-seven. But, I've been saying for years that the taxpayers didn't get their money's worth out of Glenn because he made one flight and immediately went into the Congress. And as a taxpayer, I objected to that. I've been telling John this for years and years. I called him up the other day after the announcement and I said, "John, I'm glad that you're going to give me one more flight for my tax dollars!" [Laughter] I think it's good, quite frankly. Obviously there are a lot of things about how weightlessness treats individuals, and the person's reaction to weightlessness is both a function of the amount of exercise or lack thereof, their general physical conditioning, and the kind of things that one really needs to know if you're going to be in a long-term mission. The more you find out, the better shape you'll be in. So he's a good data-point. He thinks he's in pretty good shape, and he probably is. But his bones are still more brittle, obviously, and I'm sure that there will be some lessons learned even during that short period of time by looking at his general physical condition, before and after. I think it's a good thing. I think we'll learn something from it.

NEAL: Do you think you'd like to fly again?

SHEPARD: Of course I would! Of course I would! Unfortunately I'm not in top health at the moment.

NEAL: That's just a subject of time. You've talked some here about NASA managers, but I'd kind of like to run down a little list with you, get some evaluation from you about some of these people we've been talking about. For example, Jim Webb.

SHEPARD: ...It was interesting being involved with the old NACA then the NASA during the formation periods because NACA obviously was a group of engineers basically. They didn't have a political type administrator. But when Webb came along, I mean what a fresh breath he was! He knew all the ins and outs of Washington. He knew which chords to play. And not that he was a lobbyist by any sense of the imagination; he didn't have to be. He had a great package: men in space. And he played it well, he really did. He did us a great favor, certainly, responding so quickly and so rapidly to Kennedy's really surprising decision to go to the Moon. He did a good job; Jim did a good job. But as I said before, I came to him with a technical request that got turned down, so at least you know he had some engineering knowledge there somewhere.

NEAL: Speaking of engineering knowledge, let's take Bob Gilruth.

SHEPARD: I liked Bob; I really did. Because Bob has been in the aviation business forever. And being right there at Langley, seeing him not every day but seeing him frequently, and talking to people who'd been with him in the old NACA days and what he had done, I mean just a remarkable, remarkable gentleman. I think that he was really sort of a hands-on kind of guy, too. I obviously appreciate his decision to let me make the first flight, but he never told me why he made that decision the way he did. I asked him several times over the years, and he always said, "Well, you were just the right man at the right time." But I'm sure that he was very personally involved in that selection process. There

were some suggestions from some of the other folks in the program that maybe he had made a mistake in the decision, that there might have been someone else who qualified better, but he did not change his mind. So he's one of my heroes.

NEAL: How about Chris Kraft?

SHEPARD: I like Chris. I like Chris. You know, I guess we were really closer in the early days when he was a flight director and we were all in that little building down there at the Cape. I think I felt perhaps closer to him then. But you can see the decision-making process that he went through. And you knew that he was not making any sloppy decisions; his decisions were very well thought through.

NEAL: George [M.] Low.

SHEPARD: I really didn't know George that well. I never really worked directly with him ... at that particular stage in the game. George came along later. Actually Deke worked with him more than I did.

NEAL: How about Wernher von Braun?

SHEPARD: Well, Wernher was an interesting guy. We never worked together too much. But I do remember him, as I'm sure the rest of the original seven, we had dinner at his house one night, him and Eberhard [F. M.] Rees, and we drove out to a little hillside where they'd built their own observatory. We took a look at the Moon through a telescope. Here you are with a great rocket scientist and he's showing you what the Moon looks like through a telescope.

NEAL: It seems strange but, to the public at large, Bob Gilruth is kind of lost in limbo and Wernher von Braun stands in mind as one of the prime movers. I wonder what your reaction would be to that evaluation?

SHEPARD: I think that's true. I think that Gilruth's entire life had been and was dedicated to aviation and space. And he basically was an engineer. I think that perhaps von Braun obviously was an engineer but I think von Braun had been involved in political aspects over in Germany; where maybe it was a matter of survival. And I think he dealt with the public more easily than Gilruth did. It came more naturally to him. As a result I think that in the final analysis, the general public knew more about von Braun than they did about Gilruth. But those of us on the inside, particularly the manned space aspect of it, owe a lot more to Gilruth than we do to Wernher.

NEAL: Don't you think probably that is because Wernher was always a salesman of ideas, that he was really out selling the concept of the lunar mission?

SHEPARD: Well, I think so. He almost felt that he had to. Maybe he felt the same way we did. Yes, it was a great idea, but he might have been concerned a little bit with the pressure of the schedule. That may have been the reason; I don't know.

NEAL: Here's a question that comes right out of the gang at Houston: What are some of the worst things that happened to you after your selection as an astronaut?

SHEPARD: ...This was not a fault of the system, but obviously being grounded was the worst thing that has ever happened to me.

NEAL: When you were running the Astronaut Office, what was the most difficult thing that you ran into there? Do you remember anything as being particularly difficult during that time?

SHEPARD: ... Let me say that while I was head of the Astronaut Office I was responsible for the care and feeding of very enthusiastic, very intelligent, very dedicated, and a motivated bunch of guys. And there were jealousies in the ranks, people being jealous of so-and-so particularly being chosen for a flight or for a backup position or a support crew position. There were instances where really harsh discussions were taken. So to straight things out I'd say, "Look, Deke and I are running this program and this is the way it's going to be run. We're sorry, but eventually you will be treated fairly." There were some that still feel they weren't, but a small percentage of them hopefully.

NEAL: Looking back on it, what do you think now about the *Life* magazine contract? Good, bad, or indifferent? You don't have to answer that one if you don't choose to.

SHEPARD: Well, I don't know. With respect to the contract we had with *Life* magazine, I think there's a little ambivalence there. At first it was attractive to us because it provided controlled access to the press. Especially on personal things: on personal relationships within the household, personal feelings the wives' how do you feel about your husband going into space, and that sort of thing. None of us had been involved in any of that sort of publicity or recognition before. And in the early days, it got to be a little bothersome, quite frankly, so I think at the start it appeared to be a way to get around that. And so, it seemed to be welcomed from that point of view. But, then the criticism came about the amount of

money involved. So I think all in all, we came out about even. Half the people thought it was a good deal and half the people thought it was a bad deal.

NEAL: I think somebody in Houston is looking for some information with this next one: Would you change any of NASA's current practices in selecting, training, and assigning space flight crews?

SHEPARD: Well, you know that's a very difficult question for me to answer because I'm not involved in the process anymore. I think one has to look at the flights which are being made, at the performance of the crews, the number of delays because of mechanical problems, and that sort of thing. And using these criteria, I would say they're running a good ship; I would say they're running a successful program. There have been obviously no errors which have resulted in loss of life. They have used the crew to correct many problems. The remarkable repair of the Hubble telescope . . . of course that was some years ago. But these are the kind of things which indicate to me that they're doing a pretty good job.

NEAL: Proving what you're saying, I'm thinking now I can't remember a single case of disaster occasioned by pilot error, which speaks pretty well for the group, doesn't it?

SHEPARD: Yeah.

NEAL: Of course today they're now into things other than pilots. They're into the broad gamut of flight crews, women, scientists, payload specialists.

SHEPARD: But when you consider the fact that you're still doing basic research into the operation of the Shuttle as a shell—as a vehicle—that's probably not true anymore. You've probably reached the operational stage.

NEAL: Or pretty close to it.

SHEPARD: Yeah.

NEAL: Recently, I guess it was the *Columbia* that flew its 26th mission for one spacecraft: a remarkable circumstance.

SHEPARD: ... I guess you could say they're operational, but still it's a remarkable record.

NEAL: Alan, I've asked an awful lot of questions both from my own point of view and those in Houston. It seems to me it's high time we let you say anything that you'd like, if there's something that we haven't asked that should have been asked. If so, fire for effect.

SHEPARD: ...It's been a great part of my life, to be involved in the space program. Even before that, as a Navy test pilot, I had some really exciting, satisfying jobs. But I guess I would have to say that it has been a distinct pleasure to be involved in the space program—specifically in being allowed to make a couple of really recognizable, spectacular, lucky missions. I think that the thing that has impressed me the most about the whole NASA process is that it has worked so well over the years. When you take a look at a group of civilian engineers and scientists who have to work with contractors who are paid and work for somebody else, who also have to work with the military because you've got the military involved, and that things have really turned out remarkably well. Now there have been some

heated discussions between the advantages of manned space flight and unmanned space flight, because there are parts of NASA, as you know, totally dedicated to unmanned space flight. There have been some noted discussions and differences of opinion between the engineers on space flight who would like to automate everything and leave the pilots out of there. But you know in the final analysis, I can't remember any of these decisions that were made with an absolute hard-over judgment. It seems to be there always have been, and still are, discussions going on to get the best possible answer. When you take a look at the NASA organization, 1958/1959, nobody would have thought what it has done over the years. Nobody would have thought that the computers which took us to the Moon and back were the forerunners of today's chips and today's technology because of the money and the effort that NASA spent back in the '60s. Sure we would have computers; no question about it. But we wouldn't have advanced, we wouldn't be at the position we are today without that tremendous impetuosity that NASA had in making the computers. Satellites, the incredible spate of information flowing back and forth from satellites all springing from the NASA organization. It's remarkable what the organization has done, and is still doing. It's just a great process.

NEAL: Let the record show that that commercial was totally unsolicited. That was Alan Shepard's own thought. I'm just making that for the record.

SHEPARD: You didn't have to apologize.

NEAL: I'm not apologizing. I'm making sure that somebody watching this knows very well that that was pure Alan Shepard and not Roy Neal instigating a thought or two, or not NASA instigating a thought or two.

SHEPARD: They couldn't accuse you of that, Roy.

NEAL: But this is a NASA tape that we're making. And I just want to make darn sure that the people watching it that that came right out of the blue and was pure you. That's all.

SHEPARD: Well, it's the truth.

NEAL: Well Alan, thank you very much. It's been a real pleasure.

SHEPARD: You think you got enough?

NEAL: Well, if we don't we'll let the powers that be tell us that we ought to come back and do it again sometime.

SHEPARD: All right.

[End of Interview]