

An Oral History

with

Ronnie Bilbo



**John C. Stennis Space Center
History Project**

Interviewer: Tessa Quave

2009

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This is an interview by the Stennis Space Center History Office. The purpose of this interview is to document the story of key personnel during the Apollo and the Space Shuttle Main Engine programs at Stennis. The interview is with Ronnie Bilbo and is taking place on June 18, 2009. The interviewer is Tessa Quave. Also present is Daphne Alford.

Ronnie Bilbo: I work for AGT [Applied Geo Technologies]. I'm a calibration technician, tech engineer III. I was born in Kiln in April 24, 1941. I lived there practically all my life. I have a wife, daughter and two granddaughters. I started to work in April 1966 during the Apollo Program, and they phased that out. Then I went to work for Litton, the ship building. I was there for more than five years. When we got the shuttle program back up, GE [General Electric] had the contract so they called me back. I came back and went to work for CSC [Computer Sciences Corporation]. I spent about five years out here on the Apollo Program. I thought it was really an exciting time. We were doing something that was never done before. We were going to the moon, and I thought that was the most outstanding thing this country can do. One of the major events was we did land the man on the moon several times, and I will never forget that moment. It was being televised all over the world when Neil Armstrong stepped off and said, 'one small step for man and a giant leap for mankind.' I thought that was marvelous. All of NASA's missions, every mission we had, every time we start a new mission we would get new technology—point in case, cell phones and laptop computers. We can monitor weather around the world called satellite communications. We can do anything we want with the technology we have. NASA has helped mankind around the world—did great things. I think we're still going to. I think every time we get a new mission, we're going to come up with new technology to help mankind. One of the most exciting times was when Neil Armstrong stepped off on the moon module. There were some events out here—used to when they had lunch at the Cape—he was audio all over the test site. And I remember one event, it was a rainy, cloudy day and it was launch with one of the Apollo crew, you could hear him, he said, 'I got more warning lights than I can read.' Somebody come on later said, 'I think we had a lightning strike.' Everybody held their breath when he said, 'warning lights.' We didn't know what was going on, and when the warning strike ended, Apollo was lifting off the pads. We did some things back here that was the first time that never had been done before, Stennis back then was called Mississippi Test Site [Facility]. They played a major role in us going to the moon, with NASA going to the moon. We are probably the best center here that NASA's got because we do the testing for the engines. We do the testing, and if it weren't for us, they couldn't even get one of these things off the ground. I think we play an important role in our space program. Like I say, I have been here doing the Apollo Program, and we did

things. After the Apollo Program they got the shuttle back on line and that was to me really exciting. We had a vehicle that could land and take off. That was marvelous. We did this and we continue to doing it, and I'm looking forward to the next project that NASA has under these new missions that are coming up. I think we're going to get more technology that's going to benefit the world. I think that's a great thing. It's wonderful. I would not work nowhere else. I wouldn't work anyplace else because it's a difference if we have a challenge every day. It's a different challenge. I work at the Calibration Lab. They can come in any day. We have all the people over there who are dedicated to doing a good job. Whatever they have, we can find out what the problem is and correct it and go on and keep NASA in business, and to keep us in business. It's an exciting place to work for me. I remember the first pictures that NASA took of the moon surface. They took a satellite and took pictures of the orbit satellite of the moon for the first time. I remember sitting in my living room, and I said, "Wow! That looks great." *[Laughter]* So when they were building this test site it was nothing but swamp. I got discharged from the Army, and I come out here and went to work for GE then. During that time I can say it was a real exciting time. We were doing things that were never done before. There were some ups and downs, but we got the job done. We continue to do the job after all these years. We're still doing a good job. Nothing has changed. We're going to get better. That's what I like. We're looking at the universe like it's never been looked at before. We're looking at things we didn't know that had been out there. I think that's marvelous, just great. I'm looking forward to continue the space program. We're seeing how far we can go. One of Star Trek's—Captain Kirk's new frontiers, that's what we're going for new frontiers. *[Laughter]*

Tessa Quave: When you started out here with GE, what were your [job] titles? What were you doing?

Ronnie Bilbo: I just got out of the Army. I started as a supply processor. They had opportunities then, things that you could do. I got to another position and then I worked there for several years or a couple of years. As they were bringing things in ... and was trying to get stock piled on things we need ... that was the hardest part was getting things in to do the testing, all the equipment and everything. We were real busy trying to get all that equipment in when we did that. We had different locations. I started out with the warehouse—where the fire station is. They used to call it site maintenance. There was a big operation there. I got interested in calibration. GE really wanted to develop their people, so I volunteered to go to a dimensional school and did that for several weeks. I had a pretty good knowledge about dimensional measurements. That was real easy for me. I was getting in to it real well. In fact, the calibration lab was in this building [Building 1105]. They moved it over to [Building] 8110 and [Building] 8100. Going to the moon was a five-year mission. GE, Boeing and Rocketdyne, North America—these corporations were helping us to promote the space program. It was just a good place to work. We're not a team, we're family and we're more than a team. We all do real well together. That's what I like about the people here, it makes it great. *[Laughter]* We all got the same attitude. Let's get the job done. Let's go. We're ready. I think the next cons and pros are going to be marvelous. We're going to do things we're never ever done before. It's going to be a new step, a real new step. I'm looking real forward to it. I see new

things happening. We're probably going to grow some more. We get these programs in here, and we're probably going to grow some more. That's good. Everything to me looks positive. I'm so anxious to see this new program go up and see how well we can do that. We always have and we always will.

Tessa Quave: How do you feel the energy was back in the day when we were testing for Apollo? Is it the same? Has it increased? Is it different?

Ronnie Bilbo: The enthusiasm back then—because it was nationwide—was great. Everybody was behind it. I mean, it was like, we gotta get this done. The big thing was we have to beat the Russians there, and we were gonna do that come high water. *[Laughter]* That was the big thing. When they sent the satellite up, Sputnik, and it was going around the earth. Everybody got real nervous about that, but when we took the pictures of the moon and flew our satellite around, it did something. We took pictures of the surface of the moon, and that's never been done before. That made everybody have more confidence. We knew we were going to the moon. When JFK got up and said, 'we're going to send a man to the moon in this decade,' and we did it in five years. That was wonderful, wonderful. We did it.

Tessa Quave: Any specific memories—that anytime you're thinking back to that day, could be technical, but it could non-technical, just any specific memories?

Ronnie Bilbo: I remember several things. They used to monitor ... you could hear a launch . . . they had audio here on-site . . . about the lightning strike and that was one thing. Of course, what really upset everybody was when they had that accident at the Cape. They were doing a test and the astronauts got . . . we lost three astronauts because of that accident. But, we found the mistakes and corrected it. We did things to improve that. I think during that moment, I don't think we lost any, was the only astronauts we lost at that time period. When Apollo 13 was going to the moon and they had the fuel cell blow out, the explosion of the fuel cells, we were worried, and everybody was worried about the astronauts. Could we get them back? Could we get them back? But, I felt so comfortable; I felt so, so, I just felt real good about that we were going to get them back. I just felt overconfident we were going to get them back. And, Houston Director—I'll never forget that, when this happened, he said, he told his people, "Failure is not an option." He meant that we were going to get them back one way or another. I felt that was the attitude. When failure is not an option, we're gonna get them back, and we did. I had all the confidence in the world that we would do that. It didn't bother me a bit. I knew that we would get them back. That just shows us what we did and what we thought of the space program we wouldn't let knowing stop us, and it didn't.

Tessa Quave: What about the SSME testing? I know you worked heavily in Apollo, what were your roles in SSME?

Ronnie Bilbo: We are doing the same things we are doing calibrating and doing all testing for that. I do the dimensional calibration. My role is doing a lot of hand tools and things that they work on engines, equipment they need. We got all kinds of equipment

that comes in such as System 10 for Flight Hardware and things like that. When they do a test, they use a lot of Digital Calipers, all kind of equipment for maintenance on engines. To me it's a very important job. We do the job right. One thing I see that NASA did very well by selecting the contractors to do this, and AGT is one of them. They do an excellent job for NASA. They treat their people excellent. I couldn't ask to work for nobody else. There is nobody else any better than these people, and we're gonna do a great job for NASA. We're gonna accomplish our mission whatever it is. It's going to be better and bigger things yet to come.

Tessa Quave: Looking into the Constellation Program, what do you feel was gained in the Apollo and space shuttle programs—more like the best practices that you can tell us?

Ronnie Bilbo: It's going to be very similar to the Apollo Program. The engines they use and the rockets. We got that technology at hand. We've put it to better use now. We have improved the technology. We're going back to very close, very close to what we were doing back there doing the Apollo Program. The type of engines and the size of the craft and everything are going to be very, very close to what they were doing to the Apollo Program, and the only thing is that we have better technology now, and it's going to be a great mission. I'm really looking forward to that. That's going to be an interesting part of the space program.

Tessa Quave: Do you recall any significant achievements during the SSME testing? I know that for Apollo everything was so new—first time for everything. What about the space shuttle?

Ronnie Bilbo: The test site was down about five years. There was nothing going on. I think there was about a total of 150 employees here at that time. Under the Apollo Program we had about 3,500 people out here. They phased out. Everything was cut down to about 150 people. When they got the shuttle program back online, all your LOX [Liquid Oxygen] line had to be purged. They had to get everything back up running again. They were real worry about things not working like they should—seals or valves not working. When they started loading everything up with fuel, I spent several days and nights checking manifolds making sure they weren't leaking in certain areas when they were pressurizing everything—getting them low docks and fueled up. We did that and everything went pretty well, better than I had expected. I figured things had been sitting around that long, something might go wrong. They did a good job during the Apollo Program. They were loading LOX on the barge out there, and this was probably '81 or '82 and the LOX barge dropped its LOX on the deck of the LOX barge and a seal gave out and cause that to happen ... They had us to go out there ... people who worked in the calibration lab. They were worried about the flanges. That's where the flange would come out of the bottom of the tank into an exit line and they worried about the flanges not being parallel. So we had to take one flange off and bring it to the lab and measure the flatness and the parallel of it to the bolts that held it on. Once we found out there were no deformity in there, we had to take it and match it up. We precisionally did this and got both sides parallel and perpendicular to one another, and we made both sides match. I don't know what the outcome was. I think it was just a gasket that gave out. It was

probably a Teflon gasket that ruptured somehow and that was one of the major events. It was about this time of year. It was hot and was probably about July. I thought we'll never do this; we'll never do this. But we got it done. *[Laughter]* NASA was very happy about it. We found out what the problem was, and it was a seal that went bad. They were satisfied that it was a seal because the two services that met were all parallel and perpendicular to one another. Of course, you never know today something like that could happen. They could come in and say we need to find out what this problem is. Here, it was something recently. They had a little valve like an overflow or return valve on an external fuel tank. The valve had some washers broke loose and it went into a tank. They brought some stuff out here. They manufactured some particles and we measured them and weighed them and run a test on them to see if they had done any damage internally to the tanker or to the return line back going back to the tanker. Where there was an elbow, they were afraid it would brush it to the elbow. They run a test on it to see how that happened, and they found out it was minor damage done to it. I thought that was an interesting project we got. We don't know in this type of business, you can possibly think of everything, but there is something you have never thought of—just like that valve going out—there's just something going to happen. When some of those things happen, we got to find out how to fix and keep it from happening again. I get up in the mornings and come to work, and I can hear people say, 'I had such a bad time getting up.' No I get up and come to work, and it's fun. *[Laughter]*

Tessa Quave: I know just being in Public Affairs ... and I'm not in the calibration room, but everyone's just amazing.

Ronnie Bilbo: Amazing, it's marvelous, it's marvelous. One of the things, when they were doing the Apollo Program, my dad was working over in the ship yard in Pascagoula. They were going down Highway 90 one morning when they launched one of the Apollo rockets. They were driving down by the beach in Biloxi, and they saw it go up that far away. That's how big that sucker was. It lit the sky up. I never forget the first time they tested an engine out here. Of course, they were supposed to test it that day, but things kind of fell back behind schedule. They told everybody this was the first engine they were going to test out here so it's going to make a lot of noise for a long ways off. Well they tested the sucker about 4 o'clock in the morning. I was living with my parents then, my brothers and sisters were there. This thing went off at 4 o'clock in the morning and the house was shaking and the ground was shaking and the windows were shaking. So everybody runs out on the porch to see what was going on. Oh, they're testing the engines, that's what that is all about. That was the first time they ever tested it. Like I said, where we had lived at—maybe 12 miles from here—the ground was actually shaking. Those were powerful engines. This new program that's coming up was pretty close to that. They found out the way the Apollo engines were tested. If they did it on a real cloudy day, the sound waves kept close to the ground, they could burst windows out in Picayune, Bay St. Louis and Waveland. So they had to wait on a clear day to do it *[Laughter]*. They did sound testing. The horn is still out there where they used to turn it on for testing. They had monitors way off-site to monitor that sound wave and to see if they could do anymore damage or rock anybody's house off the foundation *[Laughter]*.

Tessa Quave: *[Laughter]* That is unbelievable.

Ronnie Bilbo: Like I said, there were things going on back then that had never being done before, and they were still excited about it. The attitude of the whole country was behind NASA. That's why I'm thinking if we get this new program going, I think that will change. I think we'll get people's enthusiasm. I can't wait for it to happen. I'm really excited about it.

Tessa Quave: Who do you think were some of the unsung heroes that were back here during that day, who gave them everything they had, and we really don't here that much about?

Ronnie Bilbo: Well, everybody was doing 110 percent. I mean everybody. There were no slackers. There were people who were enthused about it. If we had to go back then and do the same thing, I think it would be the same. You can't pick out any individual. Like I said it was a team effort. They did it, and everybody carried their load. I think we will continue to do it. I think you can't single out no individual. I think it's team work. Like I said, NASA is here, Stennis is here. It's a family and everybody works together well. If these guys out there at the stands doing test or something and need a piece of equipment and call us up and say 'I need this' or say 'can we bring this in?' We do what we can for them and get it back to them so they can continue testing. I think it is a real close working relationship with everybody. Everybody knows one another and that makes it good. We do it as a team. Get everything working like it should and do our testing like it should. We have done that. I think we have done an excellent job on that, and I think we are going to continue to do an excellent job on that. Especially with companies like AGT, it's an excellent company, and I think NASA thinks a great deal of them. We continue to do great things for them. I think AGT and our groups can continue to do excellent things for NASA. Whatever they want us to do, we will do it. It doesn't make a difference what it is *[Laughter]*. I think we are a great team out here. I think we are a family. We are going to do great things.

Tessa Quave: That's it. Thank you so much!

(End of Interview)