

JOHNSON SPACE CENTER ORAL HISTORY PROJECT

ORAL HISTORY TRANSCRIPT

WILLIAM S. MCARTHUR, JR.
INTERVIEWED BY JENNIFER ROSS-NAZZAL
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ROSS-NAZZAL: Today is January 20th, 2017. This interview with Bill McArthur is being conducted at the Johnson Space Center for the JSC Oral History Project. The interviewer is Jennifer Ross-Nazzal, assisted by Sandra Johnson. Thanks again for taking some time this morning to meet with us.

MCARTHUR: Jennifer, thank you for coming up here, and Sandra. I can say we're really happy that you're part of the S&MA [Safety and Mission Assurance] family. I think with our knowledge management function it's a good fit. I'm looking forward to the opportunity to share some of my memories.

ROSS-NAZZAL: We're looking forward to it. We've heard about your front porch activities. Definitely interested in hearing more. How closely did you follow the early space program when you were a kid?

MCARTHUR: I think I followed it as closely as most young people did at the time. In the spring of 1961, with the first spaceflights, I was almost ten years old. My guess is I was in the fourth grade at the time. I was always interested in the sciences. My dad had majored in math, so a lot of things I think imprinted on me as a little boy. My dad was really one of these larger-than-life figures. Anything I associated with who he was were probably things that I embraced as things I

wanted to be. He actually was a farmer. We owned our own farm. He had served in World War II and was still in the Army Reserves when I was growing up. In 1961, I'm trying to remember if he was a general officer by then. He became a brigadier general in the Army Reserves, so again just a really larger-than-life John Wayne type figure is what I remember. I think that all influenced my interest in science and technology and engineering, so man, I was really excited.

As a kid I picked up the model rocketry bug and really enjoyed doing those things, and of course followed all the launches. Interestingly enough, a few years later, I guess it would be eight years later, as a freshman or a plebe at West Point [United States Military Academy, New York], they marched us all into this auditorium, and we sat there and watched on—I'm sure it would have been pretty advanced technology at the time—but the TV images were projected on the screen in front of the auditorium. We saw the Apollo 11 landing and saw those videos. I would say almost the earliest memories I have of human spaceflight and the firsts in human spaceflight are significant in those memories.

ROSS-NAZZAL: I had read that you liked to doodle space vehicles and rockets as a child.

MCARTHUR: I did. [I also remember, clearly, drawing picture of rockets when I was in second grade. Probably should have been studying my spelling list, but... Fortunately, Ms. McDuffie was very patient.] I'd take scrap lumber. I remember building an airplane I could sit in. Ironically, I actually found a connection to my childhood after I got here, and I was in the Shuttle Program. Being on a cotton and tobacco farm, especially the cotton, periodically my dad would hire someone to do aerial spraying and apply pesticides. I remember the crop duster was a gentleman named

Mr. Modlin. Somewhere in there I remember being promised the chance to go fly with Mr. Modlin one time, and it never happened.

Gosh, this probably would have been seven or eight years ago. I'm in a meeting, and one of the engineers here on site is a gentleman named Tom Modlin. I said, "Well, I knew a Mr. Modlin back when I was a little boy and this was in North Carolina."

He goes, "Oh, I grew up in North Carolina."

I go, "Robeson County, Scotland County, Mr. Modlin, crop duster."

Tom goes, "It's my dad." I didn't complain, but I never got to fly with Mr. Modlin.

ROSS-NAZZAL: Did you have a chance to explore aviation as a child? You didn't get to fly with that crop duster.

MCARTHUR: No, not really. I don't know if I didn't have the opportunities. I'm sure if I'd had the bug really strong then I could have. I got involved with the usual things. Went to a very small high school. My graduating class was the largest in the history of the school at that time at one hundred students. The population of the school had increased because in the late '60s this was right in, I think, the real impetus for desegregation. My freshman year the high school was segregated, my junior year the high school was fully integrated.

Still the BMCs, the big men on campus, were the athletes. I wasn't unathletic, but I was certainly not a superstar. At 145 pounds I was an offensive lineman on the football team. We did okay. Our senior year we I think went ten and two, lost the state championship by one point. We were small, but we were sneaky. If you couldn't block somebody head on, you'd figure out a way to catch them by surprise. No, I didn't really.

As I mentioned I was really interested in model rocketry and started with little rockets. I remember one that I really liked. It promised with the right engine that it could go to an altitude of a mile and actually exceed the speed of sound. I thought that was pretty cool. Because we lived on a farm, we had big open fields all around the house and during the fallow season would plow the fields under, then they were just really pretty open. I remember we did have cotton starting to grow when I tried to launch my supersonic rocket. I was a little worried about what it might actually do, so I put a D cell battery up in the upper part of the rocket, hoping the extra mass would keep it from [flying so high that I couldn't visually track it]—I wouldn't lose it. I think what really happened is it had a slight little structural failure up there, so the parachute wouldn't deploy. It went really fast and really high. Then I think it buried itself so deeply in the field, I never could find it.

You do have to be careful what you say, because somehow your words have a tendency to come back. I was going into Fry's several years ago, and they used to have a little section where they would sell model rockets. There was a little sign that said, "For many of us an Estes rocket was our first launch. Bill McArthur." I didn't intend that to be an endorsement whenever I said it, but that sounds like something I would have said.

If you remember, the Tet Offensive was in 1968, so every day on the news we'd go home and we would see the combat footage from Vietnam. As you recall, that's when helicopters became deeply associated with ground combat operations. We'll probably get into some of this later, but at that point I'd been interested in going to West Point for a few years. That worked out, so I got into the academy. In the second summer, they tried to give us a week of exposure to all the various branches in the Army. We'd spend a week doing combat engineer work, or we'd spend a week with artillery and spend a week with armor. Then there was one week we were doing

infantry operations, and one of them involved an airmobile operation. Everybody with a rifle gets in the back of a helicopter, good old classic Huey. They'd take you somewhere. You'd get off, and then you'd go do your things on the ground.

We were far enough into the summer that we'd been exposed to a lot of heat, dust, rain, discomfort. We're sitting in the back of the helicopter. I look at the front, and I see the pilots up there. They look really comfortable; they just look relaxed. I really liked things that flew. Right after that we had to pick our majors at West Point, so I chose aerospace engineering. I was going to be doing something in science or engineering, so I chose aerospace engineering.

We were able [to display]—we called them knickknacks. As an upperclassman, I think they allowed us to have two knickknacks, two little decorative type items, on your desk, so I always had some combination of helicopters and rockets on my desk. I remember my senior year I had a model of a helicopter gunship. I suspended it from the ceiling, and then from the minigun in the nose I stretched a strand of red sewing thread to the counter by the sink. I put little toy infantrymen down there, and then I took little pieces of cotton and used a pencil or something to darken them up, make them look like little explosions. I put them around. Our room was going to be inspected that morning, and the major who supervised us was just a gung ho infantryman. He came in, and he saw my little gunship attacking the infantrymen on the side of the sink. He didn't give me any demerits, but he did suggest I not do that again.

ROSS-NAZZAL: What interested you in applying to West Point?

MCARTHUR: So now we cycle back. In 1955 a first cousin of mine, one of my dad's nephews, graduated from West Point. It was obvious my dad was really proud of him having done that.

Name was Carl Cathey, Jr. Carl was commissioned in the Air Force. In the late '50s he was flying fighters out of Myrtle Beach Air Force Base [South Carolina]. As the jet flies, it was probably only seventy or eighty miles away. We had lots of family members in this community; all the farms in this area had been subdivided from a much larger farm that my grandfather had owned. We would find out that Carl was flying, and he was going to fly over the area. You'd go out. Here this F-100, it would come screaming overhead at about five hundred feet.

My parents never said, "We would like for you to go to West Point." But I think at an early age I knew that that was something that they thought was worthy. It's not a goal in and of itself, but a worthy step as part of the process of growing up and eventually becoming an independent adult. I have to say I think that planted the seed. Ultimately, I decided to go to West Point because I wanted to be a soldier. It seemed like if I was going to go to college, and I was going to be a soldier, that certainly seemed to be a pretty good path to be on. Then over the years I read some of the Red Reeder West Point books, which certainly don't paint the West Point experience as being easy, but maybe they glamorize it a little bit. Maybe they focus more on the humor than on the pressure being there.

Also, I've always considered myself pretty conservative from the standpoint of doing normal things. But as I look back, there's a certain—I don't want to call it rebellious—a string of somewhat, I don't know if they're rebellious or risky actions and decisions. Everybody in my school were applying to places like UNC [University of North Carolina at Chapel Hill] and NC [North Carolina] State [University, Raleigh] and Duke [University, Durham]. Those were the teams people rooted for, and those were the schools that all my friends—my really close friends in high school went to UNC or NC State. I don't know if for some reason I subconsciously wanted to just do something different, wanted to not follow the same path that everyone else was going.

It sounds good when you're at the decision-making point. It's attractive. "I'm going to stand out by just being different." Then you get to the point where you're just being different and you're going, "Maybe I want to be back in the crowd." I ran into that in my Army career as well. As a young lieutenant, none of us could immediately go to flight school. That was just the way the rules were. In those days, being a pilot in the Army for a commissioned officer was not a career. Being a pilot was a skill. Just like being a paratrooper, like jumping out of airplanes, it was a skill. You got a badge for it. If somebody said, "Well, what do you do in the Army?" [you would not say pilot.] When I was a lieutenant I was an armor officer who happened to have gone to flight school and had wings.

My first assignment was in the 82nd Airborne. I was in the only tank battalion in the Army that could be transported—actually we could sort of be air-dropped, but that never worked out too well—in a C-130 airplane. That meant these were the only armored vehicles that could be deployed as part of a rapid reaction team or rapid deployment force. The 82nd deployed to Kuwait or Saudi Arabia in the early '90s. The first armored vehicles to go came from the 82nd Airborne because they were the only tanks—and they were too light to really be tanks—they were the only armored vehicles small enough and light enough to be quickly air-transported along with a larger ground force.

I went there, and then I applied to go to flight school. Of course the guy in Washington who managed my assignments said, "Oh, that's a bad idea. Going to flight school will hurt your career because you're not doing mainstream things."

I said, "Well, okay, but I want to go fly, so I'm going to flight school." I went to flight school and went to Korea, and then came back, and I was in my next assignment. All along, I

would have to say I really thrived in the academic environment at West Point, I just enjoyed it. I got good grades. I found it a very positive experience.

A significant number of the faculty members are former West Point students. They try to bring in diversity, because they really don't want to have such inbreeding if you will of the culture. Still, two things happen. One is as the majority of the faculty members are active military, so as a cadet you become really aware that those opportunities are there, and you look for the ability to get that kind of assignment, if that suits you. Because I did well enough as a cadet, even in my senior year they asked me about my interest in coming back to be on the faculty. My major was in what was then the department of mechanical engineering. The head of that department put me on the list of people to consider in the future, if that's what I was going to do. When it was time for my career assignment to head in that direction, turned out the head of the department of mechanics was now the dean. That worked out pretty well.

Of course, I call my assignments officer in Washington, and West Point wants me to come back and teach, so I need to head to graduate school in the next summer or something like that. The response is, "Oh, that's not a good idea, it'll hurt your career. You really need to go to Germany and command an aviation company," and this, that, and the other. Which for maybe 95% of the officer corps, that's the right advice. I ignored his advice and went to graduate school.

Then I'm teaching at West Point. It's a great family assignment, really great family assignment. The kids were in preschool on base. There's a little ski slope on base. There are all the cadet activities, the movies and Broadway shows they bring in for cadets. It's a great thing for a young family to do.

While I'm there I'm looking ahead. By this time my career goals included attending the U.S. Navy Test Pilot School [Patuxent River, Maryland]. The Army would send nine pilots a year

to the Navy Test Pilot School. By this time my undergraduate degree was in engineering, I had a master's degree in aerospace engineering, I'd flown most of my career, I had taught aerospace engineering at West Point. I had a bachelor's degree, and then I went to graduate school. It seemed to me I'd gone to flight school, and now the best analogy was test pilot school was sort of like graduate school for pilots. I wanted to do that.

I had already applied for the astronaut program a couple times. I got selected for test pilot school. My boss called me in, and he said, "Washington called and wants me to counsel you on the risk to your career in doing nontraditional things." He kind of smiled because here he was, the epitome. He's an academic department head. Clearly, he had an unusual career. He smiled at the irony of trying to convince me that going to test pilot school was a bad idea. That's sort of in this rebellious streak that subtly followed me along. I have all these people giving me really good advice, and I'm ignoring it.

After test pilot school, I was supposed to go to U.S. Army's Command and General Staff Officers' Course. It's a real career-advancing course. Any eligible officer can complete it via correspondence, but only a small percentage were selected to attend the resident course. At that time, I got interviewed by NASA the first time. This is '87, and I wasn't selected in '87, but NASA asked if I was interested in coming down to support the Astronaut Office in the post-*Challenger* [STS-51L] return to flight activities. I talked to my assignments officer at Washington, and he said, "Oh, this is a terrible idea; it'll ruin your career." He said, "You'll have to decline attendance at Command and General Staff College. That'll be a black mark on your career. You'll never get promoted again." I called back down here and was talking to Woody [Sherwood C.] Spring, who was the senior Army officer in the astronaut program at the time.

I said, "Woody, they're telling me if I don't go to C&GSC, this, that, and the other."

He goes, “Well, look, do you want to be an astronaut or not?” He said, “Mr. [George W.S.] Abbey wants you to come down here and work. If you tell him no, he remembers forever you said no.”

“Okay, I guess I’ll do that.”

I called back, and I told my assignments officer. I said, “Just tell me where to send my letter declining attendance in Staff College, and I’ll do it.”

I think somehow there’d been some other calls going on, because his response was, “Oh, no, no, no, I didn’t tell you to decline attendance. I said you want to request to defer attendance.” Okay, got it, so that clearly worked out.

ROSS-NAZZAL: Had you ever been interested in being an astronaut as a kid? Or was this something that you developed later on in life?

MCARTHUR: No, it became this career progression. As I mentioned, I got really interested in aerospace engineering as an undergraduate. I did that, and then I started flying. What I really liked all along was I was doing things either that I wanted to do or that were going to lead to something that I was interested in professionally. I went to test pilot school because I wanted to be a test pilot, and lo and behold, I think it was one of those really key milestones or key experiences in my career that were probably critical to being selected for the astronaut program. There’s no doubt I would have been disappointed not to be selected. But if I had left test pilot school and then gone to Command and General Staff College and then gone out to Edwards Air Force Base [California] and done flight test work or Fort Rucker, Alabama, and done flight test work, that was a path over

which I had a good bit of control. The fact that being on that path at some point provided the opportunity to persuade NASA that it'd be worth taking a chance and seeing what I could do.

Of course, once I came here and then spent three years supporting the Astronaut Office, by that time I think the disappointment in not getting selected would have been a little more intense. Again up until that point it was a, "This would be really cool, but I won't judge whether I've been successful in life based on whether or not I become an astronaut."

ROSS-NAZZAL: You mentioned Woody Spring. There was also another Army astronaut that was selected, Bob [Robert L.] Stewart. Did [he] have any influence on your decision to apply?

MCARTHUR: Bob Stewart, absolutely. Bob was the first Army person to be selected for the astronaut program. He was selected in the 1978 group, as you know, the TFNGs, the Thirty-Five New Guys. It's interesting. When I'm talking to Army people I say, "The '78 group, they were just really history-making." Up until that point all U.S. astronauts had been white men. Now you have the '78 class. It had the first African Americans, the first women, the first Asian American. I said, "And the really unusual one is the first Army astronaut." I read about Bob's selection in the little newspaper called *Army Times*, "Army guy selected for the astronaut program." I'm going, "Well, now isn't that interesting?"

I did a little research. There's his bio. I said, "He's an Army aviator, that's pretty cool. He's got a master's degree, he's an Army aviator. So he's in the Army, I'm in the Army. He's an aviator, I'm an aviator. Has a master's degree, I'm going to get one. He went to Navy Test Pilot School; well, that's what I want to do too."

I was already interested in Navy Test Pilot School. I said, “Well, if I just do the things I that I’m already interested in doing.” Then it was probably 1979 the Army solicited applications for the 1980 astronaut class. If you really stretched your interpretation of the required qualifications, I said, “I could argue a case that I meet the qualifications.” So I applied for the program.

I was showing my wife some of the application. There’s one, I think it’s either the personal background form or maybe it’s the security clearance request. It says list your relatives. My wife was devastated because I had omitted our few-months-old daughter from my list of closest relatives. I knew I had no chance of being selected. The Army forwarded maybe thirty, thirty-five applications to NASA. Mine was not one of them. Oh, I’m shocked. They sent a rejection letter back. “Thank you for applying. We reviewed your application. We only forwarded the applications of the most highly qualified people.” Subtext: “you were not deemed highly qualified.” That wasn’t a shock.

They included a demographic summary of the applicants that were submitted. You could see once more these common characteristics. Aviation—at least [to] the people in the Army who had reviewed applications—aviation seemed to be a positive qualification. Test pilots. Advanced degrees. My recollection may have been that all of them had a master’s degree or higher. Again it was, “Well, I’m not disappointed.” It was fun; it’s like buying a lottery ticket. I knew the chances, if they weren’t zero, they were pretty darn close to it. If you don’t have a lottery ticket, you don’t care what the numbers were last night. If you got a lottery ticket, it’s a little more interesting.

I looked at it that way. Also maintained that I was preparing one day for having grandchildren, and I would tell them, “I applied for the astronaut program.”

“Well, Grandpa, did you make it?”

“No, I didn’t make it, but I applied.”

I think I completed ultimately seven applications. Obviously most of them didn’t get very far because there were things that occurred in there. First, I didn’t apply again I think till after I’d left graduate school, because I just said let me achieve some of these additional enhancing experiences and then proceed with applications. Then there were things. For example, *Challenger* [STS-51L] occurred, and then the selection process got delayed. I guess my interview was actually in 1986.

They did have a selection that year, because they brought in the ’87 group. I did get interviewed; I got my first interview with the ’87 group. I was still at test pilot school. I hadn’t even completed test pilot school yet. That was, I think, kind of positive. It was interesting. I was in the first week. I said, “Ooh, first week. That really means something.” Then I wasn’t selected.

I came down here, and in 1989 as they were doing the interviews, they got the first couple weeks going. I had no call. An Army buddy of mine that was in my test pilot school class was in the first week in 1989, first week of interviews. We had him over to the house, and he just started mentioning, “Oh yes, I think it’s really significant that I’m in the first group.”

I told him, I said, “Yes, I used to think [so]. I’m pretty sure in 1986 that was significant, but I don’t think it is anymore.” It finally worked out. I maintain that two things influenced my selection more than anything else.

The first is because my family and I were down here people got to know my wife. NASA realized that if they didn’t select me in the ’90 class, the Army would move me, and my wife would leave too. They figured they really wanted to keep my wife in the area, so they decided I could stay. Then the other one was they realized the only way to get me to stop submitting applications

was to select me. There were twenty-three in my group. You don't know where you sit on the selection list. I maintain if I was number twenty-three I'm just okay with that.

ROSS-NAZZAL: How do you think your Army career prepared you to be a mission specialist?

MCARTHUR: I think in a few areas. One is you really learn very early on in the Army to be a member of squad. You learn to be part of an organization in which its members have to rely on each other, that teamwork is really important. You don't have to be the squad leader. While leading the organization at whatever level is important, what's more important is the success of the organization. I think one of the things it teaches you very early is teamwork. I think that's important.

From a leadership standpoint, you learn to accept responsibility. If you're successful in the Army, you learn decision making. It's not so much how to make decisions but that you develop a willingness to make decisions. Hopefully in there your decision-making skills are good enough. What I've seen, in particular when you're planning things, when you're preparing, you sometimes will see people that are reluctant to make decisions, they're indecisive. I think being in the military helps you become comfortable making a decision and accepting responsibility.

Part of it is the old George [S.] Patton quote that says, "A good plan this week is better than the perfect plan next week." The idea that very often you need to move forward and if you realize that you're a little bit off target or off path you can then make an adjustment, but if you never get started you can never get to your destination. Putting the organization first, I think if you look—I can get in trouble for this. I have before. If you look at the number—the Army population in the Astronaut Office has always been small, but if you look at it, where do you see

Army participation perhaps being disproportionate as a population? Permanent or semipermanent assignments in Russia, like the Director of Operations in Star City. A number of us Army folks have done that. Very early in the Space Station assembly program where you had a choice: are you willing to go for really long training and a lot of travel going to Russia and now Europe and Japan and Canada? Or are you going to decline those assignments because you want to fly on the Shuttle? I think you'll see a disproportionate number, up until 2011. You may see a disproportionate number of ISS [International Space Station] crew members were out of the Army. An awful lot of us have done EVAs [Extravehicular Activities]. It's that grunt work, the hard uncomfortable physically demanding; go out and suffer a little bit.

I don't know. Being on Space Station was a whole lot easier than spending thirty days living in a tent out in the woods.

ROSS-NAZZAL: I think this might be a good place for us to stop today. [I'd] like to pick up next time with your work coming to support CB [Astronaut Office].

MCARTHUR: Okay.

ROSS-NAZZAL: Thank you so much for joining us today.

MCARTHUR: Sure.

[End of interview]