Mr. Dennis Armstrong

Oral History

Kennedy Space Center

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Moore: Today is Friday, June 28, 2002. I'm Dr. Patrick Moore, University of West Florida Public History Program and Kennedy Space Center Summer Faculty Fellow and I'm meeting today with Dennis Armstrong who is currently in charge of the Web Broadcasting Facility here at Kennedy Space Center at the Press Site, and done a number of other things as well. How are you today?

Armstrong: I'm doing well. Thank you, Pat.

Moore: Good. Give me a little bit of background, tell me where were you originally from. What did you do with your life that ultimately brought you here to Kennedy Space Center

Armstrong: Uh, that was, that's a pretty twisted route. Actually I started out, I was born in Minneapolis, Minnesota. My father was from the Minneapolis area, my mother was from a small farm town about 50 miles away just over the border in Wisconsin at a place called Ellsworth. Ellsworth, Wisconsin is really the, the little town that I grew up in. Like I say, a small, small farm town. Uhm, my parents were divorced when I was five years old and I went to live with my mother and also spent several years living with my grandparents in that same small town. I think I went there about second grade and I graduated from High School there. Uhm, the, just a kind of an interesting point is that that same high school, that same area people have a tendency to live there and stay there from generation to generation. Point in fact my, the high school that I graduated from, Ellsworth High School, was the same high school that my mother and my grandmother graduated from so I unfortunately I broke that chain with my own kids 'cause we moved around a lot, but I graduated from Ellsworth High School in 1964, uh, went to, uh, it was an agricultural college, we referred to as "Moo U," it was in Riverfalls, Wisconsin, subsequently became a, affiliated with the University of Wisconsin

branch system. Went one year there, uh, went to live in Madison, Wisconsin over the summer after my freshman year and unfortunately that is where my, my mother died there. I wasn't really sure what I wanted to do at that point. I dropped out of school started working in a bank in a place called Redwing, Minnesota about 12 miles from the little town I grew up in.

Moore: This was 1965.

Armstrong: This was, uh, yeah it would have been the end of, yeah 1965. Uh, started working in a bank there, got drafted right around New Year's or so of 1965. Enlisted in the Navy and began my four-year tour with the Navy in, it would have been February, middle of February in1966. Went to boot camp in San Diego, at San Diego they sent me off to a communication Yeoman School in Norfolk, Virginia. I spent several months there and was fortunate enough to do well in that school and they offered me some choices as far as where I would report and ended up reporting to Naples, Italy in September of 1966.

Moore: Not a bad place to go.

Armstrong: No.

Moore: ...for a year.

Armstrong: No. No, it wasn't. Again, I had, really didn't even have an idea that there was Navy in, in Italy at all but that's where I ended up. Reported to the NATO base there where I stayed for a

couple of three months I think it was before ultimately being assigned to the COMFAIRMED Staff Message Center. This was the Admiral Message Center in Naples.

Moore: That's what COMFAIRMED...

Armstrong: That's right. It stands for Command Fleet Air Mediterranean. So I spent um, my, basically my whole tour there. Uh, while there in Italy I was introduced on a blind date to my wife, kind of an interesting thing. She didn't speak any English at the time, I didn't speak any Italian. Needless to say I was somewhat motivated and started picking words up fairly quickly. But, uh, that was a very different sort of thing for me because I of course came from a protestant only child sort of an environment, very Swedish Norwegian sort of a background which is about as opposed, about as far from the Italian, Southern Italian environments you can get. My wife was the a twin and the youngest of 18 kids so when I met her and I got pretty much adopted into her family it was, it was continuous, continuous noise and activity and kids and very, very different. So, it was definitely a shock coming from the environment I came to and then, and then, kind of assimilating myself into the Italian community there.

Moore: So they all lived right there, where you were?

Armstrong: They lived in, they lived in Naples, almost all of them with the exception of maybe one or two brothers and a sister lived within calling distance off the balcony so it was a very tight-knit very, uh, active family group. There is now, we're talking about you know, several years later, this was 1968 is when my wife, Pina and I were married in Naples and now we have, you know, great, great

nieces and nephews. If nothing else the Italians are very prolific and although even there as with today the size of families are, are somewhat smaller than they were but most of her brothers and sisters have, you know, seven kids, six kids, and uh, right now there are still eight of my wife's generation alive of the brothers and sisters. So it's, we still enjoy going over there. Of course I started picking up Neapolitan really more than Italian so uh, I got to be fairly conversant in the dialect.

Moore: Were they pretty quick, quick at, at embracing you into the family after you...

Armstrong: Um.

Moore: ...because of a change, A US service man?

Armstrong: Yeah, it, it really was. It was very different not only for me of course but for them also and the interesting thing is that my, my mother-in-law uh, basically adopted me almost immediately. You know, for her and, and basically the other Neapolitans like her having a, a, an only child from a broken family was almost unheard of so she was immediately very sympathetic and very motherly and nurturing towards me so, to the extent that, uh, you know, she would often do things for me and take care of me in ways she wouldn't for her own daughter or the rest of her kids so I became very close with her. The father on the other hand was a little bit different. Sailors have a reputation, most of us know about, especially in foreign countries so he wasn't buying into my sincerity with his daughter at all and it wasn't until probably a couple of weeks, I think, before we were married that he finally accepted the fact that I was serious and I wasn't going to go running off somewhere at an inopportune moment. So uh, after we were married he became one of my closet friends and we

spent an awful lot of time together and I really enjoyed him and he's, he was a real character, and uh, had a lot of stories to tell about the Second World War where he was a spotter for the, for the Germans, for the Nazi's during the Second World War. A lot of people of course during the Second World War were involved in things that they didn't necessarily, you know, fess up to later on but he had a medal from the Germans that he'd gotten for spotting US Aircraft, and uh, but a really, really nice, very genuine person and we had a, we had some good times together.

Moore: Now you said being an only child in a broken home, did you have other uncles? You were a, that neighbor, that family lineage back in Wisconsin was there, did you have other family, uncles and aunts and cousins?

Armstrong: I had, I had uncles and aunts on my mother's side that I grew up with in that same general area. Um, most of them of course have been dead now for several years and as I've moved away, we haven't had the contact with the, the first, you know, there's one set of, one first cousin. I had three first-cousins and two of them have died but one of them is still there but it has been several years since I've seen or heard anything from them. So it is an interesting phenomenon of that particular geographic area that I went back to, this was several years ago and on my 25th High School reunion and there were probably 120 or so of the 180 approximate class that were back for this. And what had happened is that all the rural schools in this little farm town area had been consolidated the year before I graduated so my senior year we more than doubled, I think it was, the size of my class, so I didn't have a lot of history with some of these kids but anyway about 120 of them were at this 25th anniversary. And the interesting thing about it was as we went through the program and of course these folks were, they were with their spouses and some of them looked exactly same as they did,

some of them I could have sworn were different people, but they had, I remember this one part of the program where they asked those of us that had moved more than 100 miles away to stand up and be recognized. Apparently this was a pretty big deal and there were six of us. So almost everybody that grew up in that little area stayed, you know, within a fairly, fairly close proximity to that area and it was really unusual that anybody moved away. So, it's, if it hadn't been for the Navy I probably would still be there.

Moore: An interesting dynamic. Did any of them come to your wedding in Naples? Was there...

Armstrong: No, no one from the states came. Uh, I had my grandparents. By that point my mother died of, of cancer, as I think I mentioned before, in, at 41 and that was 1965. And uh, my grandparents, my grandfather had died a few years later and my grandmother was still alive but was quite elderly at that time so there was no one, no one from my immediate family that attended the wedding in Naples although several of my service buddies were there, so.

Moore: Now, when you were there how long was it before you left? It must have been kind of a, kind of a challenge to bring you wife back to the states.

Armstrong: Well, it, it was and uh, let's see I was there three years and nine months. I was married when I was 21, just before my 20–, well actually no it was a little bit before my 22nd birth, over there they have kind of an interesting phenomenon. I guess it is somewhat similar to here but a little bit different. It's where you have to get married in front of a Justice of Peace and then in the church, and

I was married on February the 29th of 1968, a leap year, and I always figured that I wouldn't have to celebrate that more than once every four years but I did not get away with that over the years.

(Moore laughs)

Armstrong: But although I was legally married in the eyes of the church and certainly in the eyes of my, my then wife's parents, we still weren't married. So, uh, we didn't actually get married in the church until February the 15th of 1968. So that period of time although we were married she was still with her parents and I still lived in my apartment and uh, it was...

Moore: A church wedding.

Armstrong: ...interesting.

Moore: The one that matters.

Armstrong: That was the one that mattered. And uh, after the wedding we, I remember we took off that night. We stayed the first night in Rome and then we took about a two-and-a-half week trip in my little Fiat 850, we went up through, up around Venice area. She had her twin brother worked up in Venice so we stopped to see him and then we went up through Austria and uh stayed in a place called Bremerhaven, then on the southern part just across from Austria in Bavaria and then we drove the rest of that day up to northern Germany and stayed that night in Bremen and then we went across Denmark and went to visit an aunt of mine in Sweden who had, after she was 50 years old, had

married a cousin, a Swedish cousin who didn't speak English. So we went up to stay with them and we stayed...

Moore: This is your aunt.

Armstrong: This is my aunt.

Moore: So you have a, as a tradition in your family of marrying people you don't speak the same language with.

Armstrong: (laughs) Well actually my aunt did speak Swedish, so. But, uh, so it was really interesting going up there. I hadn't been in that part of the world before, so, I did have, as I said, my, my, family had come from Sweden and in the general area. It was a little town called Algaras near a larger town called Skarra, and this, the husband that my, my aunt had, had married was a minister in the town of Skarra. So, uh, when we got there, of course my wife at the time didn't speak any English and I was doing by that point fairly well at Italian so any conversation that went on, it'd be my wife would say something, I'd translate in English to my aunt who in turn would translate into Swedish for my uncle who would respond and it would go back and forth like that. It was a fairly lengthy process but uh, we had a really good time. I got to met a number of the, you know, the cousins that, you know, I had never met before and it was an interesting time. And then from there we drove we back down and took a more western route and went through, let's see, Belgium, and Holland and uh, we went through Luxemburg, started to go up into France but this was a period of time when General de Gaulle was in power and not real good relations between the French and the Americans and we were

treated fairly badly a number of different ways so instead of going up to Paris we got as far as Nancy, France and said, we decided we didn't want to go any further so we went over into, through Monaco and then down the Adriatic side of Italy and back home, about a two-and-a-half week trip but it was, it was a nice trip. We enjoyed ourselves of course.

Moore: That sounds like it was fun.

Armstrong: Yeah.

Moore: And when you got back to the base did you live on base or did you...

Armstrong: At the time...

Moore: Now that you're officially married.

Armstrong: Well I was officially married, actually a friend of mine and I, two friends of mine, one was a civilian, one was a military, enlisted man like myself had rented an apartment, the three of us in a little suburb of Naples. We were the only Americans at the time that lived there so it was kind of an interesting experience. But, we then rented an apartment at a place on the outskirts of, of Naples, a place called Lago Deverno, and uh, nice little, little apartment. It had, that's where we lived for, oh let's see, until about seven months before we left in, in 1970. Uh, and then that's where we were when our first son was born and of course coming up with a name for a son or a daughter over there that's half Italian and half American, cause I've got, you know, a lot of different strings in me, was a

real challenge. And a, there's a story behind each one of the names of our kids also. I don't know if you want to go into that or not.

Moore: Well, it's, what did you name them?

Armstrong: Well, the tradition over there is that the first son is married after, or is named after either the, the mother or the father's father and of course my wife's father is named Umberto, and Umberto Armstrong didn't have a real good ring to it so we, we, did a lot of searching before we came up with the name of Sean, it's Sean Carlo Armstrong is his name and there's a very well known opera house in Naples called the Sean Carlo Opera House and so that's kind of where we got it from, at least for Sean. So, uh, we spent, we let, let go of our apartment about seven months before we were scheduled to leave. Actually I got out of the military in November of 1969 as part of President Nixon's early out, I got out about two-and-a-half months early but I had a job that had been offered to me on the, that was physically located at the Naval Communications Station at the NATO base in Bagnoli, in, in Naples, so I got out of the military and a couple of weeks later at the beginning of December I started back doing very similar to what I'd done before I got out but as a civilian. Uh, that was, as I said in November of 19–, actually December of 1969 when I started there, and I continued working through the beginning of 1970 there but had thought that I really needed to get my, my young family back with me to the United States. As much as I loved Italy and enjoyed it I didn't want my kids to grow up not knowing what their own country looked like and there were several Americans that had spent, you know, a good part of their lives there and I still have a friend of mine that is still there, the civilian that I referred to earlier. He came back and lived in Springfield, Massachusetts for a couple of years and then went back over there so his kids are the same age as my oldest and my second

oldest, he has a daughter that was born in Minneapolis, are still over there and don't speak English. They are US citizens but, you know, they, they live and that's their world.

Moore: Was your son born on the base?

Armstrong: Uh, he was actually, yes he was born in the Naval Hospital in Naples, Italy.

Moore: So he was...

Armstrong: He was, well you still had to go through the paperwork, but yeah, because he was, he was the son of a service man, well actually I wasn't a service man then I was, actually I was a service man, actually he was born in October, about a month before I got out of the military so he became a US citizen but we still had to go through a bunch of paperwork and everything, and he was a dual national actually. And uh, got a, actually got a draft notice when he was nineteen from, from Italy.

Moore: How did he deal with that?

Armstrong: Well uh, he sent it back and said thanks but no thanks. He had to actually make a choice as to what he wanted his citizenship to be and he chose US citizenship which meant that he relinquished his, any claim he had then to Italian citizenship.

Moore: Did your other children go through that as well?

Armstrong: No. I have one other son and he was also born in the same hospital but 11 years later when I was over there the second time.

Moore: Which we haven't gotten there.

Armstrong: No.

Moore: This is great. I mean, go ahead.

Armstrong: Well, and he never received anything. I'm not sure exactly, I don't know that he actually – see when you, when we were over there you, there is, you have to declare a residency, and uh, my wife who was still Italian citizen declared her residency there and declared her son, Sean, as being a resident there also. Uh, and I think that's had something to do with it. He then went into the Italian record system and I think that's what resulted ultimately in his getting a draft notice whereas our second son, we didn't do that. We didn't declare our residency over there at all so I don't think it ever got into the Italian system, ergo, he never, never was approached for military service.

Moore: So going back. Your first son was born and 1970 rolls around and you decide to head back to the United States.

Armstrong: Right. And we had an issue. Uh, again my, my wife was Italian and Catholic and I had come from a very strict Protestant background, and uh, my mother was dead at that time, and the American Consulate notified me that before they would allow my wife to accompany me back to the

United States I had to provide them certain assurances that, uh, you know, we would not become, we wouldn't, we would be able, I would be able to take care of her, you know, and provide for her. And of course, as a young, just got out of the enlisted, you know I was an enlisted man, was working there, only one year of school, they apparently at that time were looking very closely at servicemen bring, you know, foreign nationals back and then not being able to provide for them or abandoning them, so they asked me to get a member of my family to basically certify that, you know, I was of good character and that would be able to take care of my, my wife. Well my grandmother was not at all happy about the fact that I had married an Italian and she wouldn't sign so I had to go in for an interview and I guess I managed to convince them that, you know, that, that would not be issue so finally they did release, you know, the necessary paperwork to allow me to take my wife and son back with me. So uh, we came back on May the 24th, 1970 and my son was about seven months old or so at that time, I guess seven, eight months and I looked around for work, and this was also a period of time where there wasn't a lot of work available, so, you know, I worked in customer service I think for Sears and got a part-time job with I think it was Target at the time and registered for school. First I registered for night school.

Moore: And this was back up in...

Armstrong: This was back in Minneapolis, Minnesota. I was going to a, a Junior College there, at the time it was called North Hennepin State Junior College, I guess it was. Uh, so, I also took a Federal Entrance Exam and was offered a position within a year of my return as a, what they called a Federal Protective, a Federal Protection Officer and these were basically Federal Police that were put into Federal Buildings around the United States. It was a new core of police that was put together

and I guess it probably resulted from the fact that there had been a slew of bombings going on at Federal Buildings around the United States so they decided that they would step up the security and that's what they did. So I received a, a job offer and I went down to Independence, Missouri to the Federal Protective Policy Academy down there and an interesting thing that happened when I was there is I got back in contact, or I made contact with my father who I hadn't seen for probably about nineteen years at that point and arranged to go down and see him, so while I was there I had a weekend and I went down to New Orleans where my father was living at that time and I think he had remarried, this was his, his final matrimony, he's still married. He's about 80 years old now I guess, but it was his fourth marriage, so he's, he was, had settled in New Orleans. So, actually I went to see him and we started corresponding and he ultimately came back up to Minneapolis to visit us on one occasion, and uh, so any way I was going back, I was a Federal Police Officer. So I finished up one year. What I started to do, the, the job as Federal Police Officer, one of the reasons I had gone after it was that I was able to get put on a night shift and there was enough time during the night to allow me to do my studies so I finished my one year at North Hennepin State Junior College receiving an AA in business, and transferred to the University of Minnesota, and so, from 1971 when I started working with the Federal Protective Organization, uh, I also went to the University of Minnesota until I graduated in, I think it was March 1973 and uh, graduated with a degree in an Italian language and a minor in Criminal Justice Studies. So, at that point I had put out several applications throughout the United States and uh, the employment situation had gotten really bleak back then. There were, you know, airplane pilots that were driving buses in California in San Francisco and there was really, really difficult time to find work and I also put in through the Federal Application process a number of applications and it wasn't up until about a month before I graduated that I got my, my first interview and that was with the old Civil Service Commission for a position as Federal Investigator so I went

through the interview, they offered me a position and upon my graduation in March of 1973, uh, I transferred to Houston, Texas as a Federal Investigator.

Moore: Now, before we move down to Houston, did you ever patch things up with you grandmother?

Armstrong: With my grandfather? Oh my grandmother.

Moore: Your grandmother who refused to sign for you but then you moved back to the neighborhood.

Armstrong: Yeah. We did. Uh, there are more stories I could give on that but uh, probably best left alone. But, ultimately yes we did, we did patch things up and uh, she lived for several more years and got to know at least two of my children. One thing I forgot to mention and certainly an important event was while I was going to the University of Minnesota during my junior our second child, a daughter, Tana Christina was born. And uh...

Moore: Equally challenging to name her?

Armstrong: Yeah it was. And there's, like I say, there is a story behind that. The name Tana for example, goes back a couple of different directions. Tana was the name of an, I don't know why that name, I'd run across it in my reading at some point, it was the, the name of a chief of some Indian tribe, I think it was an Apache Tribe and it had always stuck in the back of, in the back of my head.

Well in Italian the word Tana means den, like a lion's den or a wolf's den, and of course anybody that has the name like Dennis automatically as the nickname of den, so kind of, evolved around until we ended up with the name of Tana and Christina was the name of a family friend, so that's sort of how that came about. Uh, so any way, we, we left Minneapolis. We transferred down to Houston, Texas.

Moore: And closer to your father at this point.

Armstrong: Yes. Quite a bit closer as a matter of fact and began over the year that I was there we exchanged visits a couple of times, again with my, my father and his wife, my step-mother. Uh, started working there in that area, was there for about a year and one of the disadvantages of course of this kind of work is that I was on the road an awful lot, traveling a lot, and of course with a wife that spoke only limited English, fortunately when we were in Minneapolis she had met some Italian, an Italian family that was help, actually helped her more with English than I did because I was, you know, working full-time and going to school full-time and didn't have a whole lot of time available to spend either with her or my son actually. So, anyway we went down to Houston, we spent a year there and I started looking around for some way, some other kind of work. I kind of enjoyed it. I mean, myself or a single guy in particular it was, it was kind of interesting work. You would go into a lot of different areas and you'd start going into neighborhoods and going to schools and, uh, but anyway after a year of doing that fairly repetitious sort of thing I was, I had applied for a job with the, again with the Civil Service Commission but in personnel management in New Orleans.

Moore: Going back to things you were doing as a single guy..

Armstrong: Mmh, mmh.

Moore: You weren't single.

Armstrong: No, no. I said it was a good job for a single guy.

Moore: Okay, a good job for a single guy but not for you. I thought wait a minute, you keep _____ with your wife.

Armstrong: No, no. I definitely not single at that point.

Moore: Okay.

Armstrong: So anyway, I was offered a job and I went to work for the area office of the Civil Service Commission in, in New Orleans. When I got there they had their investigative branch had lost some folks and asked if I would work for them for a while, so actually for the first several months that I was there I still worked in investigations but in the New Orleans area.

Moore: That's had to have been an interesting job.

Armstrong: Yeah. It was. It was. And uh, you know you definitely meet some interesting people. Uh, I know that I went into some areas that I, you certainly would not normally go into, in that line of work and run into some very interesting people. I'll remember, never, never forget one interview that I

did with a Jesuit Peace, Priest, who apparently had had some issue recently just before I arrived with the Internal Revenue Service and decided that as a representative of the Federal Government, you know, he was going to take that out on me and I definitely you know, heard some word combinations I'd never run into before during that particular session. So, like I say, you are welcomed in some areas. Normally though you are invading someone's privacy so you don't make a lot of friends in that kind of work and you have to have a fairly hard shell and you have to be willing to travel a lot as I said. So, anyway after the first several months after we moved to New Orleans, again, there was a, New Orleans is a very cosmopolitan city and you've got a lot of different kinds of people there. Of course you've got your, your folks there with French extract but there's a quite a number of Italians in the area also so my wife and I immediately met several, several Italian families, Italian American families, and so she immediately became a part of a, of a group of people that had very similar background to herself and continued to, you know, develop her, her expertise with English and she had also been, I hadn't mentioned this, had been the cook for her family along with her mother and had basically grown up in a restaurant sort of environment and she worked while we were there as a chef at a, at an Italian French, actually it was Italian Cajun restaurant, and uh, she's a extremely, extremely good cook, and like I say, in both, both Cajun and Italian food so the battle with her as been to keep the weight off, not that you ever get hungry by any means.

Moore: This must have been a pleasant change for her.

Armstrong: It, it was.

Moore: There's not exactly a large Italian contingency up in the inner Minneapolis area.

Armstrong: No, no.

Moore: Was Houston any better for her in terms of _____.

Moore: Not really, not really. I mean Houston was good from the standpoint that there were no Italians around that we knew at all and of course it was very different, you know, southern western, you know, all the cowboy hats and all that sort of thing that she'd seen on TV growing up, you know, it was a little bit more real for her as she was there. So she was seeing a part of America that was familiar at least through television to some extent but her English improved quite a bit there because of the fact that we were, there were no other Italians around and she was forced to use it and became, started becoming a lot more dependent or independent in that area and uh, then when we finally moved to New Orleans she, for example, got her driver's license for the first time which made things a little bit easier for both of us because she was able to move around on her own, and uh, so we spent from 1973, I spend one year there with the Civil Service Commission and then applied for a position with the Department of the Navy. There's a large Naval base, the naval support activity and there were several other Navy and Marine organizations in that area. Uh, since we'd returned to the states, although we hadn't really, you know, pursued it all that much, in the back of my mind was the fact that I would love to return to Italy as a civilian, not military. So, one of the things that had pushed me from moving from investigations to Human Resources or Personnel Management was the fact that I had discovered that there were a number of those kinds of positions at overseas locations. So, getting into the field was, was planned but it wasn't necessarily, you know, the job that I'm looking for all my life. But anyway, getting into Personnel Management I started picking things up and started to

develop and actually enjoyed the field but from, in 1974 then we had moved from Houston in 1974 and a year after that I moved to the Department of the Navy, as I mentioned in the Consolidated Civilian Personnel Office there at the Naval Support Activity and uh, became their, within a couple of years, I became the head of the Classification and Compensation Division of that organization. And, like I say, I started to work my way up. In 1977 I applied for a position in Sigonella, Sicily. Uh, a personnel position was basically the Deputy Director at a fairly small Naval Air Facility and was selected so uh, in again, around March, April time frame of 1978 we moved back to Italy. This time a little bit further south on the island of Sicily and on the eastern coast at a place called Catania. Sicily was the major, major town in the area and I was the Deputy Personnel Director at the Naval Air Facility at Sigonella, Sicily. Uh, that base of course over the years has since grown. It is fairly large now. It grew an awful lot when I was there but I was there from approximately March-April time frame 1978 until we returned some years later, 1983 I think we came back the first day of July, 1983, but while we were there we had two more children were born. We had a daughter, Arliana Marina we call Leah and...

Moore: That's an interesting name. It has almost no kind of American overtone.

Armstrong: No, no. Well, then again, like I say there's a, there's a story behind that. Leana was a name of a female circus performer that was quite well known and happened to be touring in the area when my wife was pregnant and my mother's name was Arlane so it ended up that we put the two names together and that's how we came up with Arliana and Marina, uh, means basically Navy in Italian but uh, the Godparents of my daughter Arliana, their last name was Marino, so it was sort of a combination of things that came together where we came up with that name. In fact my daughter

Leah, was over a weekend ago and was very excited about one of her friends who had decided to name their new daughter Arliana, so. Apparently, my daughter couldn't stand the name when she was growing up and now that's all she goes by, she always went by Leah when she was growing up but now she's growing into her name I guess. Um...

Moore: And you had a son.

Armstrong: And we had a son. Uh, Damian. Actually we had picked, there was a movie that we had seen, actually before my first son was born, Sean, this was 11 or 12 years before and the protagonist of this uh, this movie was a young boy by the name of Damniano, it was an Italian movie, and my wife and I had always loved that name but unfortunately about the time that my son was born, uh, Damian, was another movie so the name probably wasn't real popular at that time so we decided not to name our first son Damian but by the time 11 years had gone by we had hoped that the, the Damian of the Devil sort of analogy had dimmed a little in most people's mind and although we didn't actually put the "O" on the end of the name officially everyone almost, one of his nicknames, most people call him Damiano or Damian but the spelling is a little bit different, instead of "ien" it is "ian" which is the Italian version. But, we initially were gonna call him junior, Dennis Wayne Armstrong Junior but at the last moment we decided to name him Damian so he is Damian Wayne Armstrong. So, he was born, again in Naples in the same hospital that his older brother had been born in 11 years before.

Moore: Now that's quite a way from, how far was it from Sicily to Naples.

Armstrong: Well, uh, driving, I don't know exactly miles but in driving it took us about seven hours from Sicily, you have to, of course you have to go over the ferry. Uh, and uh, up from the southern part of Italy to Naples which is still southern but, it is about a seven hour drive. What had happened is our daughter, Arliana, had been born, there was an agreement that the American base had with a Swiss doctor by the name of Grettera who had a clinic in Catania, so when my wife gave birth to our daughter Arliana, that occurred in Sicily. Uh, however, when she was pregnant with Damian and the time was near the decision was made to fly her up to Naples and I of course went up there and our son was born there at the Naval Hospital in Naples. Uh, anyway, the job over in Sicily was one of, was very interesting, I really, really enjoyed it and actually my boss left I think it was in late 1980 the beginning of 1981 and I was offered the job as Personnel Director, so, which I accepted and one of the best jobs I had, I really enjoyed it. A lot of good, a lot of bad things, I mean there always is in most every job, but got involved an awful lot in labor relations which was very different over in Italy than it is here, completely different, uh, set of statues that apply. Very permissive based on the American Standard, so I spent a lot of time in court trying to defend through an Italian lawyer who knew almost nothing about, you know, the American Navy, some of the personnel activities that we were involved in. And there was an agreement, the NATO status forced agreement that developed the parameters within which both Italy and the United Stated had to conduct their affairs. Uh, we had a number of, what we refer to as local nationals that were employed there, about 1000, so a very active labor relations activity there. They were very militant down in Sicily. And uh, so we had, there was a lot of involvement with them. I found that actually the best approach I think I stumbled across was that Sicilians for some reason or other seem to think very highly of Neapolitans, in fact if you go back to the time of Frederick the 2nd the whole, from Naples on down to Sicily was all part of one country called the Kingdom of the Two Sicilies. Uh, Neapolitans don't necessarily have the same

feeling towards Sicilians but Sicilians seem to have a very warm feeling towards Neapolitans so, whenever we had our labor relations get-togethers more frequently than not I would spend a good part of the time telling them Neapolitans jokes I learned from my father-in-law and they would just love that stuff. If you can't solve some of the problems at least you can joke your way around them some times and it was an interesting time. Uh, then in, let's see, it would've been 1982, actually I had got the job as Personnel Director in 1980 and I was Personnel Director for about two-and-a-half years and at this time also during this same time frame the United States was setting up a number of cruise guided missile base or it had planned on setting up a number of cruise guided missile bases throughout Europe and they'd set up the first one, if I'm not mistaken, in Londonberry, in Scotland. The second one it was decided they would set up at an old abandoned Italian Air Force station south of Sigonella, at a place called Comiso, and uh, during the union negotiations that I'd been a part of and the American Forces negotiated conditions of employment as a single group with professional negotiators on the Italian side from Rome and that would take place a various locations around, around Italy. Well anyway I had become friends with several of my counterparts at other bases, Army and Air Force and Navy throughout Italy, and uh, the person that was in charge of the Air Force bases in Italy from the personnel management perspective was a gentleman by the name of Bob Halsey, up in Aviano, Italy and I had worked with him and he when this base was being established he contacted me and asked if I would be interested in being the Personnel Representative there, being the Personnel Director in setting this base up, and that ultimately led to my very best assignment that I'd ever had up to that point. So I accepted the job with the Air Force and spent about a year in this little town of Comiso in southern Sicily, and uh, this is an area that had not seen Americans for probably since the second World War, and in fact a lot of the folks I had talked to, the

last time an American had been through there was Patton when he went through on the way up to Palermo, so, uh, an extremely interesting assignment.

Moore: And you physically moved down there.

Armstrong: No, actually the government gave me a car, a Fiat that I drove almost everyday from Comiso and it was a couple hour drive to get from where I lived in a little town called Misterbianco, outside of Catania, actually no Misterbianco was a neighboring town, it was Motta S. Anastasia which was the name of the little town I lived in, mostly Italians there. But I drove from there on a daily basis south down to Comiso which is a little town about 12 kilometers from another town that's a little bit better known, Ragusa, but it's on the south, the southern, southern part of, of the island of Sicily. And when I down there, there were four military that was there, there was a major, Air Force Major that was in charge, there was state department person that was a part of this group and a couple of other Air Force and myself. So together we began putting together our various functions and mine was to put together a personnel system for local national recruitment as well as establish a functioning U.S. recruitment and staffing system. So I, it was quite an interesting assignment because I had to meet with the labor unions in the area. I also worked fairly closely with Italian government officials and every now and then I would fly up to Rome to meet with them. And, also got emails directly from Alexander Haig who at the time was the Secretary of State as well as from, I don't remember his name, but the, the Ambassador in, to Italy up in Rome. So it was an interesting assignment. A lot of publicity at that time was focused on it 'cause many of the Europeans were not happy about cruise guided missiles bases going into their countries and, but there was a lot of interest in people wanting to work there, also. And in the first three months or so that I was there I set up this personnel system

and we received something like twenty-five thousand applications and, and myself and a secretary basically. I got some temporary help from up in Aviano that came down a couple of times, but we, as I say, put together the process and then started applying it, which included security background checks of people. But, I was getting calls from Australia, every place that an Italian had ever immigrated and wanted to come back to Italy and spoke English, of course. They were, somehow my name got out and I was, I was inundated with applications and telephone calls, a very interesting time. But we set up in a large villa on the outskirts of town while they were preparing the Air Force base to accommodate a larger contingent of military and civilians which were intended to arrive after the base was actually commissioned which happened by the way in 1983, July the first, which was the day after I left Italy. But, interestingly enough these things started going along and really, really busy, but really interesting also, got to meet some really, very friendly and, and hospitable people that lived in that area. And, it was, altogether a really good experience.

Moore: So there was a lot national resistance to the cruise missile base, not so much local resistance.

Armstrong: No. Local, no, and one of the things that was perhaps a little bit unfortunate is that, that particular area, Comiso, had been a fairly strong communist center of political intrigue apparently for years. And for the first time there was a little crack that was seen there in that political turn and, and that was that they voted socialist instead of communist for the first time. And apparently the state department and the aide folks that were in the area saw that as a plus and had kind of gotten in cahoots, I guess, with the mayor and there were some things that were being done that weren't exactly according to Hoyle that was making me extremely uncomfortable because it was putting me in

a position of doing things that somewhat, that was not in accordance with the NATO status forces agreements. And, so as time went on I became more and more uncomfortable and finally told them I was going to leave. And I did that in, let's see, that would have been 1983 as I said already at the end of June. The unfortunate thing was that I had been offered a position in another area that would have allowed me to stay in Italy as long as I wanted. And as much as I enjoyed staying in Italy and the culture and everything, I didn't think that would be a good idea, again, because now I had four children, two of them were preschool age and my other two now, my son was in eighth grade and my, my oldest daughter was in sixth. And I thought it was a good time for them to come back to the states again. So, we decided to do that and I went back to the Naval support activity in New Orleans where I had before. They had saved a position for me which was part of the requirements when you go oversees is that they have to save a slot. So I went back there.

Moore: How did your wife and children feel about packing up and going back again?

Armstrong: It was a, it was a sad experience. It really was, but at that time they all had said that they wanted, they wanted me to be happy, I had to be happy also and as much as I enjoyed Italy the work environment had gotten had gotten to where I, I was not comfortable any longer there. So, they supported it, but weren't real excited about it. And again my kids getting to the age they had gotten it was not easy for us any longer to move. So we went back to New Orleans with the thoughts that we would probably put down roots and probably would not move again. So. . .

(audio difficulty)

Moore: Go ahead.

Armstrong: Alright. So now there were four. So we had to put a fairly large addition on it. We did, started doing that, we got defrauded by the contractor. So basically what happened is, although I had returned to the Naval support activity for several months I had to retire, well not retire, I, I quit the military, pulled out my pension monies that I had and we used that to pay off some of the debts that our contractor had, had made out there in our name. So I worked for several months outside of the federal government, but within a year I returned, this time with the Veterans Administration, again in personnel management in New Orleans. Worked there for several months, had an offer back again with the Navy. This time at NSTL, which has since become known as Stennis Space Center in Mississippi. So I, I worked there for again, for several months, probably nine months or so, and by this point we'd gotten to the end of, middle to end of 1985 and the gentleman whose name I mentioned before, when I was overseas was my boss, had returned to a position he had in Patrick Air Force Base and then had moved over here to the Kennedy Space Center. So when he heard that I was back in the states they were recruiting for some additional personnel folks, so he contacted. . .

(audio difficulty, no sound)

Armstrong: . . . consented to accompany me. . .

(audio difficulty, no sound)

Armstrong: . . . decided that she would go along with moving here although. . . happy about it. . .

(audio difficulty, no sound for about a minute)

Armstrong: . . . two and half years. . . very close friend. . .

(audio difficulty, no sound)

Armstrong: . . . and my son wasn't very happy either. The fortunate thing about it is that my son had grown up playing soccer in, in Italy, in Sicily where we were and had been actually a part of an Italian team. The only American on an Italian team, of course he was dual national, so he was able to play with some of the best soccer players in the area and grew up in competitively playing soccer, not to mention the American sports also in Italy. My daughter had grown up as part of a, sort of a dance group over there that she'd traveled to France and a number of places with this little dance group. So they'd really gotten into the community. Both of them spoke Italian very well as well as the Sicilian dialect. So, that move was hard for them and then this move, after they'd put down roots again was even more difficult because they were older. So it, it took some doing, but we managed to get everybody over here and right about that time, that was the same month that the Challenger incident happened. And, of course we were somewhat concerned as to whether or not that had been a good move for us or not at that point. But anyway. . .

Moore: You had just started, you had been here, working here for. . .

Armstrong: . . . Well, since November. . .

Moore: . . . a few months on November first. . .

Armstrong: . . . the first launch I had seen was a, a night launch in November and the second launch I saw was Challenger and that was the first day launch that I'd ever seen. So, of course, I was watching along with people that had been there, I was outside the headquarters building watching it go up when I saw, you know, what happened and I didn't really understand what had happened because I'd never really seen a launch before and didn't realize that what we were seeing was an anomaly not, not a, not the norm. But, learned very quickly from the people that had seen launches several times before that something had gone very wrong. So, of course this was the, the same flight that Christa McAullife, the first teacher in space was on and it was a big deal for the schools in this area, so my kids were all out watching the launch. And, so it was a pretty traumatic event not only for me, but for the family as well, not to mention NASA of course.

Moore: Well, sure.

Armstrong: So, we've been, this is the longest I've lived anywhere. We've been in Merritt Island since we, we moved here '85, '86 and this is longer than I've, I lived in a little town I grew up. So it looks like we have put our roots here, although, of course, our kids have now grown up and, the only one that is still in the area is my youngest son, Damien, who works for a bank here, Wachovia bank. And, in Melbourne, he lives in Melbourne now. The other two kids are in Jacksonville and another one in North Carolina and four grandkids, two of which are with us at the moment as a matter of fact.

Moore: Oh. That's exciting.

Armstrong: Yeah.

Moore: It's good to have them here.

Armstrong: Well, we've had them here for two weeks now and my son and daughter-in-law have called us back and said that we have to give them back, so. Next week I'm, my wife and I will be taking them back up to their home in North Carolina.

Moore: It's going to be sad to lose them, I'm sure.

Armstrong: Well, yeah, it is. It's, it's enjoyable, but of course the nice thing about it is, as much as you enjoy them, there's also a degree of enjoyment when, when they're gone and you can get just back to the two of you again and into your routine, so. Yeah, we'll miss them certainly, but we really enjoy them when we have them.

Moore: Now tell me about your house that you bought here. You bought one on, bought a house in Merritt Island after renting for a brief time.

Armstrong: Right, we, we bought a house in Merritt Island in, let's see this would have been 1986. And, a house that had been built, of course, back there in the Apollo era, 1968. A lot of houses in this area were born during that period of, or not born, were built during that period of time and so we built

the house. We did quite a bit of work with it, both inside and out and basically my two youngest kids grew up in that house and that was, that's the house that they remember now that they're older of course. And we, we stayed there and the kids went to the local schools. All of, all four of my kids actually ended up graduating from Merritt Island High School and three of them now have gotten through college and only one is in this area, as I mentioned. So, about. . .

Moore: But then you left that house.

Armstrong: Yes, we did. We sold it, well actually we had a piece of land that we'd purchased back when we lived in New Orleans at a place called Diamond Head in Mississippi and we'd held onto that piece of land for twenty-some years and finally had an opportunity to sell it which we did in probably November or so of 1999. And when we sold that then we bought a lot here in Merritt Island off of South Courtney and in, we actually started building in 2000 and moved into the new house in February of 2001. So we're in that house now.

Moore: Was this a bigger house, smaller house?

Armstrong: Interestingly enough we had always talked about getting something smaller, but as the, as we became grandparents we started to rethink that and actually this house is a good bit bigger than the other one was, but we have, you know, our, our kids and still their friends even though the youngest ones now are in their, their early twenties, but we still have them over a lot. And, they're not married, but they have a lot of friends that are over all the time and of course the two older kids, Shawn and Tonna, are down with their children, so. Although it's bigger, it's still not empty anywhere.

Moore: The decision to move to Merritt Island originally, was that, was that a challenge? What, what made you make that choice versus Cocoa, Cocoa Beach, Titusville, any of these other areas, Canaveral?

Armstrong: Umm, that's kind of interesting, because we, we started looking, most of the people that, the two or three people that we knew when we came here, didn't live in Merritt Island. They lived in Titusville or they lived in, in Cocoa and some other folks that we, early on met, lived in Cocoa Beach. It just was a matter of going around and looking at, at what we found. My wife, actually, is the one more than anything that chose Merritt Island. She just liked the looks of it. So, it wasn't anything particularly scientific, but it's pretty straight shot also down State Road 3 to the Kennedy Space Center.

Moore: It was an easy, an easy trip down there.

Armstrong: Yeah.

Moore: Well I want to jump into actually your work here, but I need to switch the tape.

Armstrong: Ok.

(tape change)

Moore: This is June 28, 2002. This is the second tape of the interview with Dennis Armstrong, Patrick Moore University of West Florida and Kennedy Space Center. You gave us great background about your actually getting here and kind of the complexities of getting here which certainly there was a process. Uh, started this position here in 1985, in late 1985 and took it with personnel. Was it what you were expecting when you came here? Was there some intrigue about coming to this particular institution?

Dennis Armstrong: Well, there's, everybody has heard of Kennedy Space Center. Uh, I remember when, uh, you know, there are events in your life that you remember exactly where you were and what you were doing. My generation certainly remembers when John Kennedy was assassinated. That was one event that always stuck out in my life. Another one was when Apollo 11 and when Neil Armstrong first stepped on the moon. Uh, and I was in Italy at the time watching television with my, my new wife and in-laws at that point so, Kennedy Space Center and everything that it stands for and NASA and space and adventure and discovery were things that had always I think been appealing to me and I think I probably get that from my Armstrong side of the family that had, were sort of vagabonds. They moved all over the place. Of course, I'm very much into genealogy on the Armstrong side also, so, there was a certain mystique and appeal about this place, and uh, having been here now as many years I can look back and say that that's well merited because generally it has been an enjoyable period here. But getting back to working here at the very beginning, like I say, my first experience here that I really remember of course was Challenger which was not a real good introduction but we got through that. I moved on within Human Resources. I started out as a Personnel Management Specialist doing position classification, primarily some staffing also went along with that. A little bit of employee relations. I spent about a year-and-a-half or so and then

moved into the employee development area. Wasn't real excited about going in there at the beginning but it ended up being a pretty good experience for me because I got into one of the things that is probably my first love aside from program, you know, management and supervision, which when I was a personnel director I had quite a bit of experience with that but project management also. Uh, I, one of the things, first things that I did when I went into the area I was given the opportunity to set up what's known as an accelerated training program for engineers and this is what we refer to as a fresh-out program . In other words, people that are right out of college or with an undergraduate degree or master's degree go into this program when they start working for us and this was a period of time where there was a real concern about the loss of Kennedy Space Center's corporate knowledge. A lot of the older engineers, this was the late 80s, middle to late 80s, had been retiring and there was a lot of concern about how can we get young engineers to come work here, and uh, take on the responsibility of these folks that had such a rich background and so many years of experience. And so I was given this program to put together. Apparently there had been a couple of attempts made before without much success but I was able to put together a program and was able to sell it to management. We hired over a period of two to three years starting probably, 1986-1987, probably '87 around 500 new engineers that came in and went through this program. Basically what this program was was a six-month accelerated program where they would come in and be given a project that was their project to work. They would be assigned a mentor who would help them with this process. They would go through a number of tours, be introduced to a number of different areas around here so that they would have a little bit better understanding of where they actually fit into the overall scheme of things which had been a problem here because a lot of people had before had come in, worked in their little area and it took them several years to really learn that sort of thing so this was part of this six-month period. They also had something that we referred to as diverse work

assignments where you would look at the interfaces that your particular work area required you to have, whether they were with other Civil Service organizations, engineering organizations primarily or with contractor and you would actually take assignments in those other areas. You would go into the contractor area and work there along with their people and get a little bit of an idea what it's like to have the shoe on that other foot and the theory behind this and indeed what actually happened is, after having these kind of experiences going back into their work area they then understood a little bit better how the other guy lived and how things looked from their perspective, so, this became ultimately an extremely successful program. But like I say we put 400 to 500 people through this program and it ended up where the person in this program would then have to take this project, complete it and do a presentation in front of their director and the senior management of their organization. This turned out to be a really interesting process, and uh, a lot of people have told me since that it was a very rewarding experience and the mentors also. We noticed a lot of the people that really hadn't got much attention over the years, I mean they were an expert you know in their particular area, had been there for a long time and uh, you know, hadn't advanced for one reason or another or moved anywhere else and the tendency was or the situation frequently occurred or sometimes occurred anyway, where these people really hadn't gotten all that much attention over a period of years and now what was happening is, a young just out of college young man or woman had been put under the tutelage and it also kind of an interesting phenomenon that occurred that a lot of these people got very much into this program and very much enthused and I think all of us..

Moore: Both ends.

Dennis Armstrong: Both ends.

Moore: And in the middle.

Dennis Armstrong: That's right. And I think all of us that have developed some kind of expertise or some skills in an area would love to be able to, you know, pass these on to someone. You know, providing us with a legacy of some kind and that's kind of what happened with this program.

Moore: So in essence the program was kind of designed, as you said, you were losing your institutional knowledge or fear of losing it that you would have people kind of mirror each other so they would learn, they would take on some of the knowledge that the older people would have so that you would have something to go on for the future.

Dennis Armstrong: That's right...

Moore: Not so much to sit down and record what they did but rather.

Dennis Armstrong: No, no, you actually worked along with them and sort of hand in hand. And uh, it was an interesting phenomenon of a social interaction, and the differences but yet really not that much of a difference between generations. The older and the younger folks we found there got to be some really close friendships there and some close relationships that, of course, didn't hurt the younger people as the years went by as they started moving up within their career because these mentors of theirs and the management people that they had come in contact with had been able to see what they could do. They saw their project. Some of these people did just some outstanding

things. And uh, it was a real honor to be a part of that program. You know, setting these programs up and what they would do is they would do weekly notes, they would have to turn in their project. It was a written thing, so we had, basically recorded every week what was going on in their lives during that six-month period and it, we've got some really good young engineers, now of course, many of them are in their 30s and starting to get into their early 40s that have gone through that program and almost without exception I've had only positive feedback on this. So, that was one of the things that I really enjoyed as a part of that particular organization.

Moore: Why did the program end?

Dennis Armstrong: Uh, we stopped recruiting, basically. We started getting into, you know we had been over the last five to six years at least in sort of a down cycle here within NASA, where here in particularly at Kennedy Space Center they have been cutting back the numbers of Civil Service for several years and there was a fairly lengthy period of time we really didn't hire anyone else. Uh, I've, I've heard, I'm not involved with that area anymore, that the program has sort of been resuscitated to some extent but I've haven't heard much more about it so, I don't know a whole lot about it right now.

Moore: So how long were you running this program, when you ran these, five or six hundred people through.

Dennis Armstrong: I ran it for a couple of years and then I was promoted to a lead position and I turned it over to someone else and it ran for another two or three years so it probably would've run

through the, about 1990, 1991, 1992 area, sometime in there when we stopped hiring and didn't, didn't have the program for several years.

Moore: So when were you promoted?

Dennis Armstrong: Uh, I'm trying to remember, somewhere around '91 or '92 I believe, and uh, there was a change in management that took place at that time and I was given the opportunity to become a Tech Assistant to the director of a new organization, The Human Resources or Admin area and uh, took that assignment. Things didn't develop there as I'd hope they would. I spent time on a couple of source evaluation boards. These are the boards that are set up to evaluate, you know, contract proposals and recommend selection of the contractor. That is a fairly lengthy process, a very complicated and involved process and I learned a lot from there. And uh, when things didn't really turn out to as I'd hope them to, that they would there, I was offered a position with the NASA Exchange and became basically the Business Operations Manager for the NASA Exchange system. They have four retail stores here and they're also in charge of an employee recreation area which is a large park area and they're the ones that are responsible for all the sports leagues, the rec leagues around here and uh did that for a period of time. Was assigned actually to the procurement office at that time. Anyway while a part of the, this management organization for the NASA Exchange, actually the procurement officer was the one that was in charge of the NASA Exchange, so we did a number of new things while we were involved there also and I started to get more and more involved in procurement work and this went on for several months until I was contacted by my former boss when I was in the personnel office in training, a gentleman by the name of David Dickinson, he had moved over the Public Affairs Office as the Deputy Director several years before so he contacted me,

this was in 1995, and asked if I would be interested in coming to work with the public affairs office. And so that provided my step into the public affairs world so to speak, and I came in in 1995 and was, actually I went to work with the education area at the beginning and while I was there I was asked by the Public Affairs Officer, Hugh Harris, at that time if I would be interested in doing a study on the Internet and this was a fairly new phenomenon at that time that was getting more and more attention not only outside of the government but following along somewhat behind private industry. It was also starting to become of interest to government agencies so I went ahead and I performed this study and actually the Kennedy Space Center home page had been initiated or been brought online at the beginning, I believe it was somewhere around the September time frame of 1993 by a payloads engineer who had been involved with the Internet for some years before it really began its public usage side. A gentleman by the name of Jim Doomelan had brought this on and in 1995 about the time I got involved NASA issued a number of directives that made the Public Affairs Office the responsible party at the different centers for managing the KSC home page and basically the, to some extent also the public website. So...

Moore: When you were, when you, before you jump into this, when – one, were you excited about the idea of coming over to Public Affairs?

Dennis Armstrong: Yeah I was. I had, you know I'd been looking around for something that was of interest and for a career and the things that I'd been in had been interesting and they had added, uh, you know, some dimensions to my knowledge base but I hadn't really hit on anything that I thought was really right for me. So when the public affairs opportunity came open, I mean I'm one of these, you know, these folks as a kid, I'd been a cartoonist, and I'd always had interest in, you know,

esthetics and you know how colors went together and a number of different medians and so when the opportunity came to get involved with the Internet I think I recognized right away that this was something that was gonna be big and that would allow me to use some of those things that had been sort of hobbies for me but for which I had a natural bend along with the writing for which I had always enjoyed doing and management which I had of course always enjoyed especially projects as well as programs. It seemed to be an area that offered an awful lot of opportunity to me plus it was an area that was just newly evolving, dynamic. A lot of people I don't think back in 1995 recognized the potential there at all, and uh, so I decided that that was something I wanted to get into and it actually happened a year or two later where I was assigned as the person in charge here in Public Affairs for the KSC home page and the Internet.

Moore: When they brought you over, did they already have in mind that this would be something that you would take care of or did you come in and they were trying to find something for you to do? _____?

Dennis Armstrong: A little bit of both I think. They, they knew that I had been involved in project management for a number of years and like I say it was former boss that decided to bring me over so, uh, I don't think that they really knew, you know, what was gonna happen in this area. I don't think of us any really did but uh I think it was partially that, that they wanted to be able to use me somewhere and this seemed to be a good area, at least one area to start. So after I was in the education resources area for several months I actually move out, where we're taping this now, the NASA news center or the press site. And, I took on the responsibility for the KSC home page as I said plus I did a number of things in the media resources area out here also. Uh, you know I escorted the media that

was here and I wrote press releases and I also developed a new twice a week in-house periodical called the KSC Countdown. I developed that and the distribution processes that were there for that and wrote it for a couple of years.

Moore: Was this a newsletter?

Dennis Armstrong: It's a, yeah sort of, it's a one page newsletter that goes out. It's primarily for employees to bring them up-to-date on what's going on. I mean there are other things that have since been developed that do something somewhat similar to that but at the time this was the only thing that was put out other than the Spaceport News which has been around for years and is published every other week. So this was twice a week, and uh, it got pretty successful, it's still in place, it's still being done. It's now being done by a contractor. But I started that off, and uh, that was an interesting assignment along with some of the other assignments I had here in the media area but then the Public Affairs Officer retired, Hugh Harris, and uh, the deputy became the acting director, the acting, the deputy of course at this time as I mentioned before was Dave Dickinson. Uh, he then pulled me out of here over to become his technical assistant. He didn't know if he was gonna become the public affairs officer or not but his approach was to, he wanted to have, not necessarily a deputy but a technical assistant that could handle a lot of the responsibilities that the deputy had previously handled.

Moore: Were you glad about that move? Getting pulled out of...

Dennis Armstrong: Oh, I was very glad. I didn't feel particularly challenged in what I was doing before.

Moore: Even though you were doing the web study but that wasn't anything...

Dennis Armstrong: Well I had started to do some of the web things but I mean I had no support. Anything that happened I did myself so it's not like, it was very frustrating also because I could see the kinds of things that were possible to do but couldn't do them because I was the only one that was working. We had another lady here who is the librarian that had learned some HTML was putting up some of the pages. And of course I at the same time, uh, got an Internet connection through an ISP at home, this was in September of 1995, and really started to study the Internet and started to do my own website. Went back to school. I went to school for about five years and studied things like programming and web development, graphics technology, really started to get into this. I figured if I was gonna be responsible for it I needed to develop some basic knowledges which I have done. Information architecture, all that kind of stuff and it's been, it's been one of the better jobs I've ever had as far as satisfaction, self-satisfaction. I really enjoy what I do and I think I'm good at it, so. Fortunately, some things changed and there has been some additional development that have gone on in support of these areas.

Moore: Well I don't' want to jump too far ahead 'cause I want to keep going. You, so, so when you did the position change over to the Technical Assistant for, for Dickinson, was that, did that help facilitate the web site.

Dennis Armstrong: No actually it, it didn't. The reason it didn't was that whereas before I had a good percentage of my time that I could dedicate to the web, now I didn't. I had more than a full time job. But what did happen during that period of time was that there was a contractor that was set up to do web development and when I found out about this I made contact with them and they started doing some, some work along with me. So I started finally to have some assistance. So anyway I worked for a period of about nine months, got to do some, some pretty interesting things, one of which was that I, I've always looked back at and enjoyed was involvement with STS-95 crew which flew in 1995, I think it was. And then they had a hero's return, you know, back in the, the hey-days of Apollo whenever a mission would be over they'd have parades through Cocoa Beach for the returning astronauts. Well, of course, that had gone by the way side several years ago, but when John Glenn flew on STS-95 the local community got together, various components of the community, the Chamber of Commerce, and they sort of decided they wanted to do a hero's return parade for that group of astronauts, which included Senator John Glenn. So, I was. . .

Moore: This was in October of '98.

Armstrong: Ah, yes. I believe it was. Right around that time, 1998, correct. So, I was the representative from Kennedy Space Center who was on the planning committee for that event and very interesting process. We went through everything as far as, you know, where we were going to start the parade, the parade the itself, you know, the decision was made that the astronauts would be riding in Corvettes which of course was a link back to the old days when car dealers in this area used to basically give Corvettes to the astronauts. Well, we had a group of, of Corvettes that were brought in, partnered with Chevrolet, General Motors. . .

Moore: New Corvettes?

Armstrong: These were brand new Corvettes. Some rather interesting colors, red, you know, and they had a silver one which I thought was appropriate for John Glenn. So anyway, we went through the planning process which took several weeks and months to do and they had the parade and they went to the, what was it, the Double Day, I think it is here, hotel down on the beach, where we had, you know, some presentations. They, they gave a presentation and did autographs and did a little press conference and they had a reception there. It was quite a nice affair, and. . .

Moore: A lot of people turn out for it, for the parade?

Armstrong: Oh, yeah. The roads were kind of lined like they were back in the old days. There were several people that were there. And, I of course had not been here during the period of time when they had those parades, but that parade certainly brought to my mind the kind of enthusiasm that must have existed then and the excitement about what was going on. I mean if you look back at that period of time, there weren't a whole lot of good things going on in the United States, so this was a shining, you know, during the Apollo era, was a shining example of, of what the United States could do and was capable of doing during a rather dark period. So, that, that was extremely interesting and I met a lot of interesting people there. Of course, got to talk to John Glenn and the members of that particular crew, which was an international crew. And that's just one of the things that kind of sticks out in my own mind as I look back on some of the things that I've done here. So, anyway, moving on from that, went through this period of several months and unfortunately the Mr. Dickinson did not get

the deputy, or did not get the director position and decided to retire and they brought in a new person and he had a different view of how public affairs should be run. And did not want a technical assistant position so again I was kind of floating trying to find my way, so to speak, and this went on for a year or so. And then there was a reorganization, a rather large reorganization that took place in the year 2000, where our center director at that time, who is still our center director, Mr. Roy Bridges, decided that we needed to start moving more from an operational center and more towards a spaceport technology center, which changed very much what was top priority and where we were going to go. And this reorganization was supposed to help us start moving towards that, that ultimate goal here at the Kennedy Space Center. So as part of that I gained additional responsibility as far as the Internet goes. The people that were then involved with it before as I mentioned, Mr. Dumall and some of his folks were basically moved into some other things and so then I became basically responsible for managing the whole website and that included, you know, all kinds of, you know, the general informational architecture of the site, all kinds of concept design to fill gaps. We put a survey on the website asking folks to let us know what, what was missing, what they liked, what they didn't like, what could we improve. And went through a process of growing and, and adding content until this last November when after about a nine month study and, and work, we actually put together a brand new website that was based, not exclusively, but primarily on the kinds of things that we had heard from our customers, the visitors to our web site, as to what they wanted. So the design that went up in November of last year was. . .

Moore: November of 2001.

Armstrong: 2001, was intended to do that and I think did that quite successfully. Now at the same period of time I for years had thought that the Internet could do a whole lot more for Kennedy Space Center and NASA, than we were doing. And the area in particular that I was interested in was providing a web cast capability. I mean this is where, you know, the, the rubber hits the road, this is where the launches take place. This is where all those things you hear about in the papers, not only now, but back years ago during the Apollo era, those exciting missions, this is where it starts. And certainly through the Shuttle era this is where it ends. So, one thing that ought to become very clear to me as was involved more and more in public affairs was that there's really no other area, geographic location like the Kennedy Space Center that does what we do, certainly not here in the United States and there are very few other areas in the world the have anything that even comes close to, to paralleling what we do here. And it's the kind of thing that it excites, you know, the, every individual has this, this little bit inside of them that's adventurous and, and again, wants to look beyond the boundaries that we've, we've lived with all of our lives. And NASA just embodies that sort of thing, I mean, it's space exploration, you know, answering some of the age old questions, about, you know, is there anyone else out there. You know, what is out there, and, and, you know, realizing the possibility of exploration and, and moon colonies and Mars populating. There's just so many things that are so exciting about what is done here and that kind of information whereas you can put it out in photos and you can put out text that talks about it, being able to actually see it in a, in a movie format or, you know, a web formatted variation of it is, just offered so much more than, than I thought we had been able to do. And so, again, in the year 2000, we had the opportunity to put together a justification package and forward it to senior management and somewhat to our surprise and to many other people's surprise, this project was approved. And, throughout the year 2000 we went through the process of adding this particular portion that includes the new web broadcast studio here as well

as some other expanded areas, office spaces and a library that have been a part of a, constructional facilities projects that have been approved years before. So, this, this web broadcast pot of monies was added to it and we took over a part of that constructional facilities project for these, this new space that would include this new capability. So, I was assigned as the project manager for that and met with the, the engineers and we specked out the, the requirements, went and visited a couple of different locations that, actually universities that were, were doing web broadcasting now, not necessarily to the public, most of this was to, was to their own students, own student body, but pretty much started from scratch. We got together the knowledges and the folks that were involved in, in both the television and the computer areas and we came up with a design for this, for this studio, which I said was built last year. We had a ribbon cutting this past February, this is 2002. And have now begun using it for the purpose it was designed for, web casting and we also have a web production area here where we also can have, you know, when we are doing an event, we do web-casting but we also do HTML as well as video clip updates, particularly for launches right now is what we are doing. But we're planning on expanding this here very soon when we go into our 40th anniversary, this is, I want to say our, this is Kennedy Space Center's 40th anniversary. We're going to be doing a lecture series that will include, you know, presentations by, by folks that have, have lived the, the evolution of Kennedy Space Center. It's going to start off with our NASA historian Roger Launius next month who'll be doing a presentation on the evolution of the Cape over the last 40 years, the kind of launches that have occurred here during that time frame.

Moore: Certainly this is a new medium by which you're communicating the NASA story and this is in many respects what the challenge of, at least part of the challenge of external affairs has been

from the beginning. How did you see this being an extension in contrast to more conventional ways of disseminating information?

Armstrong: Well, one thing that impressed me about the Internet was not only the fact that it was expanding and gaining interest, but the speed at which it was doing so. I mean it as, when you look back over the years, probably, what it took fifty years for radio to was done by the Internet within a matter of a couple or three years. Television expanded quickly, but nothing like what the Internet has done and anybody that has used the Internet knows that there is something out there for, for every psyche, to cover almost every topic. And, you know, there's that old saying, about a picture is worth a thousand, a thousand words and a movie is worth several times that. This was sort of where I was coming from. I mean, I grew up doing, when, I remember in my house we didn't have TV. I remember when it first came. And, and as amazed as we were by what we could, we could see the programming was fairly limited. And again, it had been a while since there had been a major addition as far as a medium to the public affairs suite of, of vehicles that we can, we can use. I mean you've got magazines, you've got the written media, you have television, probably not a whole lot of use being made of radio by the, by NASA. But this was an area again that, would allow us to educate and inform the, not only the general public, not only the United States, but an international audience. And whereas NASA television certainly has its place and does its job, it's more operational TV in a lot of areas and a lot of it is a bit deep for the, the general public. So, the, the thought of not being constrained by, you know, who happens to carry NASA TV on their cable network and knowing that this word is not being passed to our international partners of course this being the, the era where the International Space Station is being constructed. We're getting into that phase where our international partners are going to take more and more a role, it just seemed that the timing was

perfect. So I'm glad to say that the apparently senior management here at Kennedy Space Center recognized that also and that's not to say that, you know, that we are fully staffed and are doing exactly what we're capable of doing, potentially, but we've got a real good start. And we've done our first web cast of STS-109, 110, and 111. Each one of them has gotten a little bit bigger and a little bit longer. And we've learned some things that I think are going to improve our programming here as we move forward. Not only are we going to be doing launch coverage, but, as I may have mentioned we're also going to be doing our 40th anniversary lecture series that will also be web, a series of web casts, not only to our employees but the general public. And we've had some, some indication that the State of Florida, particularly the person of their Florida Spaceport Authority and maybe in some of their research areas that already are involved in lecture series of various kinds but with the public, are interested in possibly partnering with us to do something over the web also. So I, I see this as an area that can only grow. And I've been very gratified to see the amount of excitement that has, has been demonstrated not only here locally, but within, within the NASA chain. And see that this is going to be something I think it's going to be here a long time and it's going to be. I, I don't doubt at all but what this is going to be one of the primary and one of the most important ways to disseminate information as, as, you know, as the next generation gets more and more and more into computers and the Internet. I mean we're seeing this already. The under 35 group, you know, has really taken this to heart, and I've heard, as you probably have also, many statistics quoted, but one of the most interesting ones is that the under 35 crowd, very, very few of them, or at least not a majority of them any longer, subscribe to newspapers. They get their news on the web and I've, I've verified this with my own kids. My, my oldest son now is going to be 33 this year and he doesn't subscribe to a newspaper. He has his news delivered to him every morning based on, you know, the subjects he's interested in, on his, on his computer.

Moore: How were, and this is an obvious question but I'd like it from your perspective, obviously then you're able to disseminate a different story, a different breadth of information than what you would find through traditional sources?

Armstrong: Yes. NASA TV as I mentioned before is more an operational sort of television. I mean, it's not, it's not the contemporary TV that all of us are used to watching. There's a lot of gaps, a lot of times you're watching the Shuttle sit on the pad, some of the information, well, all of the information is very much directed towards, at least the part that originates from here, the launch process and, you know, you're watching the countdown clock as it, as it ticks on and, and there is information that is provided, you're listening to the launch team talk. That's certainly interesting, but there's a very large part of, of the overall process that's missing from that. And the part that we have been focusing on, here on the web is attempting to get as much possible, not only do we emphasize the, the Shuttle processing that goes on and, and give an overview of that, but we get into the overall mission also. So we're looking at, you know, the International Space Station, if it happens to be an International Space Station Mission, we have an expert that's here that talks about, you know, what we've done with the International Space Station, what this specific mission adds to the overall adventure that we're pursuing here with the International Space Station and where we're going. And then we have, we try to include an astronaut as a part of this, who not only talks about what it's like to be an astronaut, but also goes through some portion, right towards the end of the launch and explains what an astronaut is feeling during that period of time. So we're, we're trying to get, actually, we're trying to get this to appeal to a broader audience, Mom, Dad, and the two kids, that is sort of thing. And we've got payloads that are going to be on there. We try to get it explained by people that are familiar

with them, but not necessarily in scientific terms. For example, for this, the STS-111 mission we had the Canadians here. And we had their head of the Space Station Program, a gentleman by the name of, Benoit Marcotte, who spoke about the enhancements to the Canada 2 Arm and, that were going on, you know, the new mobile base system and the, and the repairs that were going on. So we try to get into what is this mission doing, what are the important elements of this mission that the general public can relate to. And this next mission, for example, STS-107 has a number of things going on that relate to student experiments, so we're going to, we're going to focus in on those sorts of things. So it's a combination of not only presenting the excitement but attempting to sow a little bit of excitement in the science also and appeal to a broader audience.

Moore: How are you promoting this or is there some mechanism by which you're trying to get the word out that it's available?

Armstrong: Well, the primary process had been through our KSC Home Page up to this point. We also as of STS-110, two missions ago, had worked with the NASA Home Page, and that's probably been the, the biggest single source of sending people to our web site has been through the, the links and the information that they've provided about our web cast. And one thing that I haven't mentioned, of course, is the fact that web cast, our web cast also are interactive. We have what we refer to as a question board. So, we open up this question board several days ahead of time and we, we ask for people to send us questions relating to the various topics that we're going to be covering during that web cast. So, there's a lot of questions out there about the space program and what we attempt to do is provide the information to the public, but allow them to ask more questions. So, whereas this last time, the last two launches we've gotten something over a thousand questions total,

unfortunately we can't answer them all, but we have responded to something over a hundred, probably to a hundred to a hundred and fifty questions. And these, these questions have been responded to by the experts in the field, so you're getting good information back. And it certainly appears that the question and answer part also is very appealing to an Internet audience.

Moore: In terms of hits, how many, what's your visitor-ship if you will?

Armstrong: Well, the number of hits we get is now somewhere around a third of a billion a year. So it's a, it's not the busiest of the NASA websites, but it's one of the top three.

Moore: It's busy though.

Armstrong: The NASA home page is the busiest.

Moore: The one out of D.C.?

Armstrong: That's right and then the spaceflight web site is the second busiest, at least the last I heard. And of all the centers ours is the busiest. So, again, there was a, Neilson put out some information here not too long ago and one of the things they put in there were some statistics relating to the universe of Internet users. And as of that time, and this is not more than three or four months ago, the universe apparently was something that worldwide, it had finally reached half a billion users. Here in the United States we're looking at somewhere around a hundred and sixty-seven million users and fifty one percent of those on a daily go to some government web site. So, you know, not

only from that, but from the number of hits that we get it's pretty easy to see that this is a resource, this is the Kennedy Space Center that a lot of people out there know. A lot of them will never come here to visit, but the Internet web site, the cyberspace Kennedy Space Center is the Kennedy Space Center that most of the people in the world know.

Moore: I want to do kind of a two-part question, the first, when you took this position out here what was the reaction of your wife's family back in Italy?

Armstrong: The, it's really kind of interesting to, to see that reaction, because it reminds us that as much excitement as there is here in the United States we have become somewhat apathetic. And, when my wife's family would come over here and visit, I mean, they're in total and absolute awe of what goes on here at this Kennedy Space Center. And I've brought them out here and I'm sure that the, the Exchange, the retail store at the Visitors Complex had one of its better days when my in-laws were here. So, I don't think they, they totally understand, frankly, what I'm doing because the Internet itself, although its expanding throughout the world, doesn't enjoy, yet, the kind of, of support that it does here in the United States, which is the biggest universe of that, you know, the largest percentage of that total universe that I mentioned before. The fact that I work here, you know, is certainly very, very exciting to them. And I think that finally now, within the last year or so, a couple of, of my nephews over there have finally discovered that, that I am involved somewhat with the Kennedy Space Center. I've gotten some emails saying they saw my name, but they do follow the space program.

Moore: So this is exciting for them in many respects. . .

Armstrong: Very.

Moore: . . . which brings me to the second part of the question, what kind of visitor-ship, if you will, hits do you get from international, from overseas. . .

Armstrong: Sources?

Moore: Yeah, people who are interested internationally.

Armstrong: Well, the, it's a little bit hard to say because anybody who has gotten into, going into their log files to pull out that kind of information knows that there are a number of ways that people visiting this, you know, ISPS and others can mask where they come from. So there's probably thirty percent of the hits that we get, we don't really know where they come from. Probably fifty percent, maybe a little bit more, we know are from the United States and the remainder, which is about twenty to twenty-five percent, maybe even a little bit, let's say, fifteen to twenty-five percent we know come from overseas sources. And there's a number of, you know, I can't remember just off the hand, but we keep track of what the top ten countries are. And, Canada is, is big, you know, England is fairly big, South America, some of those areas have gotten very much into this and of course Europe also.

Moore: Would you find. . .

Armstrong: Japan, is another one, Germany is big.

Moore: Are these predominately countries who have a partnership already with the International Space Station? Do you see a parallel there?

Armstrong: Yeah, basically we do. With the exception of some of the South American countries which are a few, not very many, in the top ten, maybe, I'm not even sure if there is one of those actually in the top ten. But of the top ten, I would say that at least, at least eight to nine of those we know are, are international partner countries.

Moore: Now this may seem like an odd question since you've had what three, four, five months here to actually kind of clock these, chart this progress. Do you see that there's is any kind of a growing statistic as foreign countries become more connected and have greater accessibility to the Internet that you're seeing an increase or is it premature?

Armstrong: It's, it's premature. We, actually just started putting together a, a well, pretty well thought and comprehensive set of, of metrics and metric charts juts last month. So if you would come back in six months or a year and ask me that question I could tell you. But, one, one hole that we have and its got a lot to do, its got everything to do with the, the extent of staffing support that, that we don't have at the present time is that I would love to be able to put out a number of our pages in foreign languages, and particularly in the languages of our partners, but at this point. And we made an attempt at this some years ago and we had some little bit of success, but it was volunteers and you always have to be careful when you get translations from volunteers cause you don't know but what they might have a sense of humor that you may not enjoy.

Moore: (laughs)

Armstrong: And so, in order to manage that process it takes a lot of time and up to this point it, it has not been something we've been able to do. Some of the other NASA centers have started putting pages out in Spanish in particular and that's something that we would like to be able to do, but its, its on our list, its just not the, not the top one right now.

Moore: I imagine that ten or fifteen years from now listening to this tape will be comical in some respects.

Armstrong: Probably so.

Moore: Just so fledging even though we see it in a different light how far people have come. For the people who are getting on the web and you said that you did this kind of survey originally about what do you want to see on this site. Are you finding that you're accommodating your public's needs from the comments you're getting currently?

Armstrong: Yes. I think we are. We get pretty positive feedback. I mean, you're always going to find someone that can't find something that isn't really a part of your site anyway. But kind of going back to the social phenomenon that is Kennedy Space Center there's a lot of people and this probably is even more so when you get into the foreign community have heard certainly a lot about Kennedy Space Center and in many instances think that NASA is the Kennedy Space Center and

don't realize that there are ten centers and that not everything is done here at the Kennedy Space Center. So, some of the complaints we get, and of the total complaints it's actually a fairly large percentage, deals with the fact that people are coming here looking for information that they should be getting from the JPL site, the, the, you know, the Johnson Space Center web site, Goddard, Langley, you know, some, some other site. It's not something we do here. So we have set up within our web site pages that will lay out the kind of work that's done here at Kennedy Space Center as well as an overview of some of things that are done at other centers as an assist. We have also laid out some, some of the scientific program sites that people come here looking for so that they can get pointed in the right direction. But we still get, still get complaints from people that expect to find something. I mean let's face it, the Internet world is made up of people that are browsers, active browsers, which means they come in and they want to find something really quickly. And when you're talking about a website that's well in excess of forty to fifty thousand pages and any number of different topics it's difficult to say the least to put together an informational architecture that's going make everyone happy. So, I think, to the extent that we're capable of doing that, we've done a pretty good job. And again, our survey responses have, to date, been supporting that.

Moore: The transition, I want to go back to the 2000 kind of restructuring of, of the, of the management structure here and kind of the mission here. Did you sense from, you were working in public affairs both before and after, they were trying to get a specific message about the mission and the institution before and subsequently after, did you find that this period is more accommodating to your needs and what your mission is with the web broadcast as it would have been prior, if that makes sense?

Armstrong: Yeah, I think I understand. There is a difference. And it's not just the directions that we go, but it's also the personnel involved. You know, before public affairs was a set aside organization and whenever you have an organization that is not "technical" living with several very technical organizations, all of whom are vying for a single pot of money, most frequently what happens is that the, the offices like public affairs and perhaps human resources and some of those other areas, don't compete real well. So what's happened after the reorganization is we've brought in a number of different groups and there is no public affairs office at the directorate level anymore, we are now, that is part of one of several functions that are a part of, of this organization and this organization now has a more operational look to it as a result of some of the business development and other kinds of work that have been brought in. So from that standpoint we are better able to compete for money and we are better able, I think, to, to get our, our vision and the kinds of things that we feel would better support the KSC vision to a level where something can be done about it. And I think probably the, the one of the shining examples of that is this web broadcast studio. In the old world this never would have happened. And frankly, the public affairs group is, is one of those areas that has never been in the forefront of new technology. I mean, they've always, we've always kind of followed along in public affairs and, and that was when we began use of computers back in the eighties, you know, a lot of people here still have some problems with computers and are not at all that comfortable with them. And the senior, normally your older people end up being your directors, so, those are also the folks in many instances that are the least comfortable with embracing something, some kind of new technology. So whereas, computers, we started to use them more during the middle to late eighties and even thought the Internet has been around now for, let's say, a good seven to ten years, a lot of the folks that have been in senior positions, particularly in non-technical areas have, I don't want to say they necessarily have resisted, but they certainly haven't recognized the possibilities. And I think,

of course we now have an engineer that's in charge of the external relations and business development area, who I think would probably be less bothered by technology and in fact, has shown a heck-of-a-lot more support than we were used to having before, and, so yeah, the, what we're able to get into, and I think that the way that we're looked at by the rest of the center, I've seen a bit of a change there.

Moore: So really it's, the mission is partially because of new technologies, new ideas, that it's you're more receptive in this era than you would have been before.

Armstrong: I think so.

Moore: Not so much that. . .

Armstrong: That the mission has changed?

Moore: Yeah.

Armstrong: I think it's more of the former than the latter although I think that as we move into the latter it's more and more important that we get the word out and that people understand and that they get not only, they understand what we're doing but they get enough information to be able to make an informed judgment about the importance of what we're doing. And I think that's been one of the biggest problems is I don't think anybody would say that what we're doing it not exciting, but it's not a part of their everyday life and it's not something that a lot of people really understand, so we need to

go where, you know, the people are and where they can get the message. And certainly the Internet and web broadcasting's got to be a very important part of, of our effort and I think it's becoming more and more just that.

Moore: Do you know of any congressmen, policy makers who are aware of what's going on here now they can see it?

Armstrong: Not really. I, I think. . .

Moore: That's a. . .

Armstrong: We've gone. . .

Moore: _____ question, but it's. . .

Armstrong: We've gone from February with the ribbon cutting to June where we are now, the end of June, so this is still in its infancy. We've had people down here from Headquarters that have come in and looked at what we're doing and say, Wow, I didn't have any idea you were doing that and get on the phone right away and start calling people up in Headquarters. So the word is spreading and we've had, we've had Sean O'Keefe who's our new administrator in to do what we refer to as a little celebrity endorsement, so he knows the studio is here now. We've had Shuttle commanders in here to do little pieces. We've had our, our launch director in, so, it's one of those kinds of things where you're not going to see a full banner add out on the highway anywhere and you're not going to

necessarily see commercials on TV. Things don't really spread like that within the government, but as time goes on I think we're going to see more and more and more focus and recognition be put on this area.

Moore: In keeping with that, how, what's your current staff on, on running this operation?

Armstrong: Well, I've got here in the web broadcast studio, I have one part time producer and one full time technician/artist and those are the folks that are assigned to assist us with the web broadcast as well as the, the live video clip updating on launch day and, and all of that sort of thing. Plus I have now, also, a co-op, that is here, two different co-ops actually, one is here one semester, the second one comes in when the other one goes back to school. So we have one co-op. Also, that is, I've had, they've spent a lot of time in there and has learned the operation quite well so able to provide some real assistance. Now that's on the web broadcast side. I also have three-quarters of one person's time in the, in the writing area. I have a writer that is assigned to me three quarters of her time. And in addition to that there's a centralized pool of web developers that don't report directly to me, but because I'm their biggest customer they've assigned basically the equivalent of, of five man years of effort each year to supporting my web development and database and application requirements. So, when you start adding all those together you're talking about, but see one of the things that really interesting here and makes this difficult, is the fact that the only person that's really assigned full time to me is my co-op. All of these other people belong to contractors that report contractually back to other areas, so the, the challenge here is continuously you have these three different contractors, to get them to work together, to track things as they move, you know, through the different areas, and to, to get across or to try to make this rather different group a team. And,

that's the biggest challenge. I think we've been doing it. Everybody enjoys doing this kind of thing, so it's not that you have to pull a lot of hair, necessarily, but, suffice it to say that the time that is given to me is just that, it's given to me, it's not my right. So, I have to be able to meet and deal and work with people to help me do what we're doing here.

Moore: And I know it's a complicated question, because it comes from all different areas, but what kind of a budget are you actually, you're reaching arguably more than any other resource out here in many. . . well you're talking about a third of a billion hits a year. Is that what you said?

Armstrong: mm-mm (affirmative) right.

Moore: That's a few people that you're coming in contact with. What, I know it's difficult obviously, well how do you allocate resources?

Armstrong: It's really very easy, I have no budget.

Moore: Ok. Super, well there we go.

Armstrong: Really, it doesn't take a whole lot words. I have no budget myself that I manage. Now, when we built this studio I was received, I received a budget that we used to build the studio with and do some of the initial outfitting, but one of things that I, I saw very early on was that there wasn't going to be enough to build the kind of studio and outfit it the way I wanted so I went to our spaceport services organization here and our web master and we kind of worked out together a plan where they

would get some usage of the studio for their own purposes and in turn would take over the maintenance of the equipment and would purchase some of the equipment that has gone into this, this studio. So, that has allowed us to outfit it the way it's been outfitted. Now, there is some money that's part of an operational budget here that is used to support this web broadcast studio, the operation of it, the staffing of it. But that money is all mixed in with other kinds of work that is done out here at the, the press site and being that I am the new area, if there's any real belt tightening it's done here. For example, we started out we were supposed to have three artists/technicians and a producer; we're down to a part-time producer and one graphics artist. And we do have a source where we can bring other people in to assist us when we need them, but that's the assignment of folks that we have here. We've requested two more people in the writing area. One would be a writer but one would be pretty much a full-time assistant to me in the Internet management and information infrastructure work there. Developing content, overseeing the content, showing how it's laid out, marrying it with graphics, with video, you know, with text. All of that kind of thing, which is a part of my responsibility, but which I don't really have as much time to dedicate to as I would like. So we're hoping to see a little bit of an addition there. And I know that the IT world that owns the, the time basically of the web development group that I use has also gone out and requested an additional three and a half people which were not approved this year, but we're hoping will happen next year to dedicate to this area. So, whereas a lot of the, the organizations around NASA have dedicated staffs, that's how it works here.

Moore: You have none. But we are, we are out of tape, but I, I would like to switch.

Armstrong: Ok.

(tape change)

Moore: Today is Friday, June 28th, 2002, Patrick Moore, University of West Florida, and Dennis Armstrong, this is the third tape of our interview and (laughs) we keep barreling along. We were just discussing the web casting process and resources that you have used in, in getting this and the fact that you have zero budget. You have the material put together and some human resources which have been provided to you at this juncture. You've thought about going out and looking for other sources of revenue, perhaps selling your services or putting them on some kind of a shared service. Tell me about that thought pattern.

Armstrong: Well, there's, unfortunately being a government entity; there are certain roads that are closed to us. I would, and had attempted to, actually market what we're doing here with some of the space community. For example, there are other organizations out here, like Delaware North that runs the Visitor Complex. I've gone to them and said, are you interested in the something like this and received a polite, but really haven't received much more than politeness. I've, I've, I think that there may be something that could, could happen with them here in the future also, but at this point it's still kind of new. I also went to Florida Spaceport Authority and talked to their senior management. I've talked to other State of Florida organizations about whether or not we could partner some way. Part of the problem and we've got to work this through the, the legal office still, but we can't compete with private industry, so, some of the marketing that could be done, if this was a private industrial organization are closed to us. I don't think we're probably going to be able to expect that we're going to be able to finance, you know, another position based on partnerships with academia or with, you

know, Florida State or other places. We'll have to see how that works, because again there's always the issue of competing with private industry. If private industry can provide this kind of functionality then we're not supposed to be in competition with them. Another possibility is what's known as a subscription service. Now cable in the TV world, cable TV is a subscription service. You go into an area and you subscribe to cable TV and NASA TV is or is not a part of what you receive as a part of that subscription. Well, there's something you do very similar and some of this is being done now in a number of different areas where basically there is a, an Internet subscription group that would go out and, they're doing this in the video area and web-casting in a lot of it, for example Major League Baseball web-casts, NASCAR web-casts. I read something this morning, I don't even remember what it was, oh, basketball, the, one of the basketball leagues, not the National Basketball Association, but one of its feeder leagues is doing some web-casting. The thought behind a subscription service is that if you take this web-casting and you make it a subscription, in other words, in an area of an organization like Discovery-dot-com or, or Yahoo, or something like this would offer, offer this subscription. You come in and you pay a certain amount a month, maybe ten bucks, eleven bucks, whatever it might be and we will provide you this array of programming, Major League Baseball, NASCAR, Kennedy Space Center's web broadcasting. And for that, they would pay, for example, if we became a part of this, they would then pay us an exclusivity fee so to speak. We don't do daily broadcasts in our web broadcast world here. We don't, don't have the money, don't have the staffing or anything to be able to do something like that so I'm really sure, you know, how that would work. I personally look at that the downside of that and that is those organizations that you want to be part of your, your viewer-ship, like universities and schools at all levels, elementary school through high school through university frequently would not be a part of this subscription service, meaning that this kind of informational, educational kind of programming that we're doing here would not be

available to the general public. So, although that's certainly a way to go, that alone from, from my perspective is kind of overwhelming tilted me against that kind of approach. Although if you could get the money to expand your resource here, that is also good, but at this point although I know that that kind of possibility is out there, I personally am not pursuing like I am in some other things. We've also attempted to go through, you know, spaceflight, NASA Headquarters, to get some additional funding but, that's still pending.

Moore: And you've only been going along for a few months so it's not like you've been. . .

Armstrong: Well, actually I started doing this some months before it was ever built. And that's part of the issue is that when you're out there trying to convince somebody of the value of your product it's nice to be able to show the product. And I think a lot of what has been the issue up to this point is people really want to wait and see. You know, they want to see what's here. They want to see what we've done and we have received, you know, a goodly bit of interest from Florida, the State of Florida, to maybe partner with us in some areas. And I, I suspect academia might be interested in doing something like that and others areas. So, at this point, although it's been, there's been a proposal put forward that we do, by another group, a tech group, that we consider a subscription service, I've not, I've not pursued it, although I probably will at some point in the near future if, if the, if the livelihood, or the, the continuity of this facility is threatened, because of lack of funds.

Moore: It poses all kinds of challenges that, that the previous forms of information dissemination never had to deal with.

Armstrong: Very true.

Moore: . . . facing on a constant basis.

Armstrong: Very true.

Moore: Well this is remarkable and it's, it's been fabulous. Are there other pieces of information that I haven't asked you about that you feel are pertinent to this discussion?

Armstrong: Well, you know, a lot of people will look at web broadcasting and, and particularly maybe some older folks who really haven't had a lot of exposure to it and say basically, what is it. What is web-casting? What is the allure there for me? And, and basically what we have here, although we're, we're calling the web broadcast studio is a TV studio. The only thing that's different is ultimately the, the piece of equipment that makes distribution of the signal. Whereas a TV studio, a normal TV studio, you would be able to watch programming over the television, this TV studio, in effect, distributes that signal through the Internet and you can sit there at your computer and watch this programming. But everything else that goes on in putting together a TV program goes, goes on here also. I mean, we do special effects, you know, we do transitions from one speaker to another speaker, we have TV cameras that we have to work. There's all kinds of graphics and imagery that goes on in putting something like this together. In addition, which you frequently don't find much on, on TV, is you have that interactive capability. We put together a very functional question board here, where you come to our web site, you submit your question, and, you know, the theory behind it is anyway, that a certain percentage of those we'll be able to answer, which is something that's more

difficult to get with TV. So, I think it's, it's a matter of attempting to the extent possible, keep pushing for an expansion of this particular medium here and I think it will pay benefits. It's just that, you know, in a rather austere, austere world that we, we live in right now, we're competing with a lot of other, a lot of other organizations and a lot of other functionality here at this space center, which is an operational space center and has got to continue to launch Shuttles and, you know, discover new, new vehicles to launch with and process and do all those sorts of things that, that we do out of that same pot of money. So, where some people may say, how's it possible that they not see, you know, the, the potential use of this. I think they see it, but again, it's like anything else, it's the amount of money. I think they took an amazing first step to allow this facility to be built. Now it's a matter of, of making do with what we have and expanding as, as, you know, as the situation allows us to expand.

Moore: Building upon what you have.

Armstrong: Right.

Moore: I think you're doing some very interesting things that perhaps NASA TV had they had the resources or the, the insight that this was something that they wanted to do might have thought about going in that direction. While you sometimes carry ASA TV feed on, on your web broadcast. . .

Armstrong: Mm-mm (affirmative)

Moore: . . . has there ever been any discussion about going the other direction. That the resources that you put together would be carried on NASA TV?

Armstrong: ummmm

Moore: I know that's a bold step but . . .

Armstrong: Interestingly enough, the only one that has, one of the, the local news TV reporters asked me that question. Internally, no, I don't think that's really been asked yet. Although I know that some of the programming that we do, there are people within the media resources and TV world here locally that would like to see some of that taken over to NASA TV, but again, within NASA TV there's a hierarchy and they are allowed some degree of freedom within NASA television that is not true in private industry because of the fact they sell what they're doing as being really more operational television so some of the, you know, section 508, which has to do with the, you know, disabilities and all that sort of thing. We don't, NASA TV doesn't really have to deal with that because of its focus. The focus of what we're doing here is different and whether or not it, it may somehow or other be brought over to NASA TV is something we'll have to wait and see. I, myself suspect it may not, but we'll see.

Moore: See what goes down the line.

Armstrong: mm-mm (affirmative).

Moore: Well, this has been great. I appreciate it and I hope that if I have more questions, which I undoubtedly am going to, that we can, we can do a follow up and ask more questions.

Armstrong: Oh, I've enjoyed it Patrick, thank you.

Moore: I appreciate it. Thanks so much.