CHEMICAL HERITAGE FOUNDATION

JEAN C. JONES

Transcript of Interviews
Conducted by

David C. Brock

Via Telephone

on

8 March, 5 April, and 15 June 2006

(With Subsequent Corrections and Additions)

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This oral history is part of a series supported by grants from the Gordon and Betty Moore Foundation. This series is an important resource for the history of semiconductor electronics, documenting the life and career of Gordon E. Moore, including his experiences and those of others in Shockley Semiconductor, Fairchild Semiconductor, Intel, as well as contexts beyond the semi conductor industry.

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ABSTRACT

Jean C. Jones begins her interview by discussing her family life and how she began working at Fairchild Semiconductor Corporation. She talks about her early interactions with Gordon E. Moore and Robert N. Noyce. She details how she became a full-time secretary for Fairchild Semiconductor Corporation and her involvement with the Research and Development Laboratory and her supervisor, Victor Grinich. Jones chronicles her daily life while working at Fairchild and shares engaging stories about Gordon and Robert. Jones continues the interview by describing the move from Fairchild Semiconductor to the Intel Corporation. She recounts stories about the daily interactions in the office and details the working relationship between several of the staff including Andrew S. Grove, Robert Noyce and Gordon Moore. Jones discusses Gordon Moore as CEO of Intel, her interaction with the Board of Directors and her communication with Craig Barrett and Max Palevsky. Finally, Jones reflects on Gordon Moore's character and what she is most proud of from her association with the Intel Corporation.

INTERVIEWER

David C. Brock is a senior research fellow with the Center for Contemporary History and Policy of the Chemical Heritage Foundation. As an historian of science and technology, he specializes in oral history, the history of instrumentation, and the history of semiconductor science, technology, and industry. Brock has studied the philosophy, sociology, and history of science at Brown University, the University of Edinburgh, and Princeton University (respectively and chronologically). His most recent publication is *Understanding Moore's Law: Four Decades of Innovation* (Philadelphia: Chemical Heritage Press), 2006, which he edited and to which he contributed.

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INTERVIEWER: **David C. Brock**

LOCATION: **Telephone Interview**

DATE: **8 March 2006 [Interview 1]**

BROCK: This is an interview with Jean C. Jones, conducted by David Brock, on 8 March 2006 by telephone. Jean as I mentioned just a few moments ago I thought we could review the broad brushstrokes of your involvement with Gordon [E.] Moore, and then move onto a discussion a little bit about your background?

As I understand it you first met Gordon Moore in the Research & Development Laboratory of Fairchild Semiconductor. Is that correct?

JONES: That's correct. That was in 1959.

BROCK: At that time you joined Fairchild Semiconductor as an assistant to Victor [H.] Grinich?

JONES: That's correct. Vic Grinich was Gordon's associate director.

BROCK: Right. Of the Research and Development Lab?

JONES: Right, of the lab.

BROCK: And you stayed in the R&D Lab until what time?

JONES: 1962.

BROCK: As I understand it from talking with Gordon Moore, you left to have a family?

JONES: Yes. I had a two year old daughter. First of all, let me explain. I had been widowed very young.

BROCK: Oh, goodness.

JONES: I was twenty-seven years old and I had two children.

BROCK: Wow.

JONES: In 1959 I remarried and I had a daughter in 1960. In 1962 my older boy was fourteen, and I thought, "It's time I was around."

BROCK: Right. [laughter]

JONES: So, I decided to sort of retire. However, I did return to Fairchild to relieve the secretaries to the executive staff for vacations, and things of that sort. I did keep a contact with my friends at Fairchild, because they all were at that time. It was a very close group in the early days.

BROCK: From 1962 through 1968 was when you were providing that occasional support to people?

JONES: Yes.

BROCK: Okay. Was that still for the executive staff of the R&D Laboratory?

JONES: No, it was for the whole unit.

BROCK: I see.

JONES: I often replaced Bob [Robert N.] Noyce's secretary, Tom [Thomas] Bay's secretary, and of course Vic's and Gordon's.

BROCK: Okay. Was it in 1968 when Gordon Moore, Robert Noyce, and others, were setting up Intel that they got back in touch with you about joining their new operation?

JONES: Yes. Gordon called me at home and asked me if I would be interested in helping them out. [laughter] "Just to get started Jean. I'm not asking you for a full commitment here." [laughter] I said, "Well, I wouldn't mind doing it," except I wanted him to know we had planned a vacation in about three weeks.

BROCK: Because this was happening in the summertime?

JONES: It was in July. And I would have to be gone for two weeks. Gordon said, "Well, we'll take you however we can get you." [laughter] So, that was how it started. After I came back from vacation he said, "You know, it's time to fish or cut bait here. Are you going to stay with us or do you want to just stay until we get someone to replace you?" I talked it over with my husband, and we decided at that time that my temper was much improved from working. [laughter] He found me much easier to get along with. [laughter] I wasn't quickly jumping up and washing the dishes, or putting his ashtrays in the sink, that kind of stuff. I didn't have time for that.

BROCK: He supported you staying on there full-time?

JONES: Yes.

BROCK: Was your position well defined in those early days?

JONES: No. It knew no bounds.

BROCK: Would you describe what it generally entailed in the earliest period?

JONES: The first day we were sitting around a conference table. We had rented space in the old Union Carbide building on Middlefield Road. They were still occupying the building. But the front corridor was what they allowed us to use. There was a conference room, and there were two or three, maybe five or six offices. The rest of it was manufacturing or assembly areas, and a small cafeteria. I think it was about thirty thousand square feet. And there wasn't a pencil. We had three telephones, each with a different number. The phones were scattered

around this conference table, and they were ringing off the hook because there had been a notice put in the newspaper that Gordon and Bob were starting a new company. There was no mention of the name, so there was a lot of discussion about how we were going to name the company and all this kind of stuff. So my first order of business was to go to a stationery supply store and get pens, pencils, notepads, and things of that sort, and also to see about ordering letterhead, stationery. They had decided on the "NM Corporation." Noyce and Moore. So, I had the stationery printed up. It took a week or ten days or something, and by the time I got it the name had changed so the paper was no longer any good. [laughter] I took the top off and we used it for scratch pads.

I used to have a very expensive petty cash fund, so if anybody expended any funds on behalf of the company I was authorized to pay it out. I had responsibility for all of the office supplies in two cabinets near my desk. I had that damn Telex at my back going off and in addition I had the only typewriter in the company.

BROCK: Wow.

JONES: So, if anything had to be typed I was the one that did it. Usually it went very well, but every now and then we would get the young engineer who had delusions of grandeur or something, because he'd come to me with this long list of labels for his file folders that he wanted all typed, and sometimes he wanted them color coded, and so forth. I said, "Wait a minute. I have a few more things to do around here. I just can't help you with this. If you want them typed I suggest you come during lunch hour when I'm away from my desk and use the typewriter, or do it at home." [laughter] So we had a few little skirmishes like that. Not very much.

BROCK: Were you the primary administrative person then in those early days?

JONES: For the first year and a half.

BROCK: Oh my goodness. [laughter]

JONES: It was a very busy time, but I just absolutely loved it. The people were wonderful to work with. You couldn't find more undemanding people than Gordon and Bob.

BROCK: In what sense were they undemanding?

JONES: Undemanding in that they would recognize when I was tied up with something and that we had to prioritize things. Their needs fell in a slot, and they were satisfied with that. But the telephone in the early days was the primary force that had to be handled well.

BROCK: Was it after a year and a half that you became the primary assistant for Bob Noyce and Gordon Moore?

JONES: Well, I was always their primary assistant. Bob [Robert F.] Graham was the director of Marketing and there was a lot of need for Marketing. So, many times he would demand my attention and he had a favorite expression that I grew to hate. "Marketing comes first." [laughter]

BROCK: Was it the case that he eventually got some additional support, and then you concentrated more on—

JONES: But I still had—his secretary only did Marketing. But that was a big load off my shoulders. I did the rest, like the typing of the progress reports, and things of that sort. And from day one, Andy wanted a progress report every month from every one of the men reporting to him.

BROCK: How many people were there early on?

JONES: Well, it wasn't very many. I'd say probably six. But I'm not sure that's an accurate number.

BROCK: Somewhere in that order of magnitude?

JONES: Yes. I think it was probably. They were sometimes very wordy. [laughter] And sometimes their handwriting was illegible. [laughter] But we got through it. One of his directors insisted upon a rough draft, and I told him, "I really don't have time for a rough draft, but if you think it's that necessary then we'll do it." But it was absolutely necessary because his handwriting was terrible. [laughter] I would leave blank spaces. I absolutely couldn't decipher.

BROCK: Who was that?

JONES: I don't want to name names.

BROCK: Oh, it's just handwriting.

JONES: I think he's a sensitive guy.

BROCK: Okay. Well, I'll leave it to your discretion then.

JONES: Yeah. I would rather not.

BROCK: Okay. So you stayed with the company then for the next twenty-five years?

JONES: Twenty-seven and a half. I retired 1 March 1996.

BROCK: As more administrative capability came on board, when did the transition happen that you really began to concentrate in assisting?

JONES: For Bob and Gordon?

BROCK: Right. And then at a certain point for Gordon full-time?

JONES: Correct.

BROCK: When did that transition take place, to working with Gordon full-time?

JONES: Let me think for a minute. I think it was shortly after Bob remarried, and he was sixty, I think, when he remarried. No, wasn't that his age when he died?

BROCK: I think so.

JONES: Yeah. And he'd been married, I think, ten years, or close to it.

BROCK: So, somewhere around 1980, does that sound right?

JONES: Yeah. I think that's probably right.

BROCK: Okay.

JONES: And he was kind of part-time at that time. He was doing a lot in personal investing and he felt a need, I think, to amass another fortune, [laughter] because his divorce took quite a bite and he had a new wife and so on.

BROCK: I understand. Well, maybe we could step back and talk a little bit about your background. What was your life like before you came to the Fairchild R&D Lab in 1959? Were you born on the Peninsula?

JONES: No. I was born in the Bronx, New York. I left New York to go to school in Idaho. While I was at college I met my husband and I married him. He was a returning vet from World War II, and we were married in 1947.

BROCK: I see.

JONES: I was a junior and he was a freshman. [laughter] I had to quit though to help put him through school, and then my first child was born in 1948 and, the second one in 1954. But Bob, my husband, was transferred down to Pepperdine [Pepperdine University]. He graduated from Pepperdine and then we stayed in the Los Angeles area for three years. He also worked on his graduate degree at USC [University of Southern California]. And then we moved to San Carlos.

BROCK: For what?

JONES: Where I had various jobs.

BROCK: And the move to San Carlos was motivated by a job for him?

JONES: Yes. The plan was, when we moved to Palo Alto that I would no longer have to work, and that didn't last very long because we moved here in 1953 and he passed away in February of 1955.

BROCK: Oh gosh. So very soon after?

JONES: Yes. He was a schoolteacher.

BROCK: Was he teaching in the public schools in San Carlos?

JONES: Yes.

BROCK: I see. The need for you to take a job outside of the home was in part because you were a widow? It must have been a factor in returning to the workforce, if you will?

JONES: Well, it was—when we moved to Palo Alto, I was going to be super housewife. I completely divorced myself from the working world, in a sense. My husband was very supportive of that. He encouraged me to do things with the library, and every Saturday he took the kids all day and that was my day off. Unfortunately, it didn't last very long. So, when I was forced to assume responsibility for the family, I vowed at that time that I would never let myself get so far away from things, or so out of touch, again.

BROCK: I see.

JONES: That was the reason for my staying in touch with Fairchild. And as it happened, my second husband passed away in 1981.

BROCK: Oh, goodness.

JONES: But I was well prepared that time. I still had a boy at home who was fourteen.

BROCK: When you went, did you say it was Iowa where you—

JONES: Idaho.

BROCK: Idaho. I'm sorry. What were your interests in college?

JONES: I was going for a business degree.

BROCK: Did you find any elements of those three years in Idaho helpful? Did any of the courses or experiences you had there particularly serve you well in your time at Fairchild and Intel?

JONES: I'm sure they did, as far as focusing and making decisions, things of that sort. As far as the—it was a very good experience for me, but I don't know how much it contributed. It probably did more than I realize.

BROCK: Well, if we go to 1959 then, you were living in Palo Alto still?

JONES: Yes. I was working at Hiller Aircraft Corporation. They were originally Hiller Helicopters, and then they changed to Hiller Aircraft, and then they were taken over by Hughes Tool Company. In 1959 I was secretary to the director of personnel, and I really liked the job. I had a wonderful time there. But I hadn't had a raise in two or three years, and he said he just couldn't do anything more. I said, "So, you're telling me to go out and get another job?" And he says, "Well, don't go—I hope not." But that's what I did.

BROCK: How did you come across the position at Fairchild R&D?

JONES: A friend that I had known at Hiller had gone to work for a placement agency, and she called me and told me that she was trying to find someone for Vic. It was a chance thing, and it was two days after I had the conversation with my boss and [laughter] he was kind of amazed at the promptness.

BROCK: Let's talk a little bit about the Fairchild R&D Lab as you found it in 1959? Tell me about your impressions of the facility itself. I know that Vic Grinich and Gordon Moore had offices separated by a small sort of room with a lab bench?

JONES: Yeah. That was when we were on Miranda. But when we first started out on Charleston Road in Palo Alto it was a leased building and it was terrible. [laughter]

BROCK: How so?

JONES: It was so cramped. My first desk, that was all I could say I had, was in an office with two other people and there was comfortable space in that office for one.

BROCK: Wow. And there were three?

JONES: And there were three of us in there and if anybody moved you had to pull your chair in. It was that tight. Fortunately my two officemates were engineers who spent a degree of time in the lab, or in the downstairs area. I was upstairs and Vic's office was next door.

BROCK: I see.

JONES: But he didn't have much space either.

BROCK: [laughter] Describe Vic Grinich in that early period of 1959 to 1962. What he was like to work for, and generally what he was up to?

JONES: He was a very intense man, in that he focused so completely on whatever it was he was doing that he wasn't aware of things around him. As an example, one day the air conditioning shut down, and I walked into his office with something and here he was sitting there with his tie tight and his jacket on, and I said, "Vic, do you know it's eighty-five degrees in here?" He said, "Oh, it is? Oh!" He jerked his jacket off and loosened his tie. [laughter] But he was totally unaware.

BROCK: Because he was so concentrated on what he was working with?

JONES: Yes.

BROCK: I see.

JONES: But he was a very gentle man and he was probably around my age. He had three children, I think, and a lovely wife. He was just a really nice guy.

BROCK: How old were you at this time approximately?

JONES: When I was at Fairchild?

BROCK: Yes.

JONES: I was probably in my early thirties.

BROCK: Right. So generally, in terms of the cofounders of the firm, you would have been just an exact contemporary with them, age-wise?

JONES: Yes. Gordon was a year younger, or close to it, and Bob and I were the same age.

BROCK: I see. What were your early impressions of some of the other cofounders of the firm? For example Gordon and Bob, at that time?

JONES: This is at Fairchild?

BROCK: At Fairchild.

JONES: Well, it was a complete opposite to what I was used to. I was used to the Mahogany Row type of offices for the executives, and they were on another level. They were not hardworking people.

BROCK: The residents of Mahogany Row?

JONES: Right.

BROCK: Okay.

JONES: And here I go to this company that's making tons of money and being very successful, and these people took the time to say, "Good morning." And "How ya doing?" In the early days of Intel I don't know how many times I caught Bob Noyce cleaning out the sink in the little cafeteria. [laughter] It was just a world of difference.

BROCK: And did you find that immediately appealing?

JONES: Oh yes, and the youth. That was another thing. They were much younger and they were kind of whiz kids. But they were just really decent folk with values. I just found it a wonderful place to work. Of course, my attitude toward working was something I was going to have to do for the rest of my life and I'd better like it. So, I felt that I'd found a home, and I really wasn't in favor of quitting Fairchild, but for the good of the family.

BROCK: At this, in this first period from 1959 to 1962, had Gordon Moore assumed responsibility for the R&D activities?

JONES: Oh yes.

BROCK: And Vic Grinich was acting as his assistant director?

JONES: Well as Gordon was known to point out, Vic was an "associate."

BROCK: Associate?

JONES: Not "assistant."

BROCK: I see.

JONES: They were on an equal level.

BROCK: Okay.

JONES: They had divided up the responsibilities of the lab between them.

BROCK: According to their expertise?

JONES: Yes. Vic was an EE [Electrical Engineer] from Stanford, and Gordon, of course, was a chemist.

BROCK: Right.

JONES: And he always thought of himself as a chemist.

BROCK: I believe he still very much does.

JONES: I think you're probably right. And I say that because I haven't seen him. I've seen him once or twice since I retired, but only at Intel. We've just not been in touch.

BROCK: Right. Having divided up the responsibilities for the R&D Lab according to their relative areas of expertise, and having associate directors it seems to me that it would require a pretty good working relationship between the two of them to handle that ambiguity.

JONES: Oh absolutely. They were very compatible. They just had a great understanding. Not that they didn't disagree once in a while, but they were both such gentlemen.

BROCK: Were they both similar also, would you say, in temperament or was one more extroverted and one more introverted?

JONES: They were probably both introverts to some degree. And neither one was confrontational. Although, they could argue with the people that reported to them on points of technology and technical detail, but when it came to anything personal they would never ever consider it. They would argue like gentlemen.

BROCK: Did that create any difficulties in terms of that non-confrontational aspect with solving some of the interpersonal issues that naturally arise?

JONES: Yes it did.

BROCK: How did that get solved? Or did it not get solved?

JONES: Well, there was one issue with—I don't know how much you want to use of this—but anyway Bob Graham was kind of a tinderbox in a way. He kept the pot boiling, and he and Andy [Andrew S.] Grove did not hit it off. They had a lot of—I'm trying to find the right words—sometimes they would have really great arguments about where the company was going and how it should get there.

BROCK: Is this at Intel?

JONES: Yes. This is at Intel. But Bob Graham and Gordon Moore were both fishermen, and they were sort of friends on the outside. One time when Andy and Bob Noyce decided to get rid of Bob Graham they did it when Gordon was on vacation. Gordon took vacations to remote places. He used to go down to Cabo before it became a big tourist attraction. And he would fish from a little fishing village there. There were no telephones. There was nothing. One time we had a big deal going on and Gordon said, "Now, I want you to call me at this place and let me know what happens." Well, I spent half a day trying to get through to this little Mexican village, and it just couldn't be done. So, I just put it aside and let it go. [laughter] He certainly understood when he got back. But they did it when Gordon was gone. Gordon did not know what was happening.

BROCK: And so that was an example of how—

JONES: They got around him. [laughter]

BROCK: They got around the non-confrontational side of him?

JONES: Right.

BROCK: Interesting. If we could go back to the early period from1959 to 1962, what were some of the other impressions you had of the co-founders of the firm? I guess they were mostly upstairs in that row of offices when you were still in—

JONES: Charleston Road?

BROCK: Charleston Road.

JONES: Yes.

BROCK: Let's talk a little bit more of your impressions of Gordon Moore in those days. I know we talked about decent values and kind of a gentlemanly figure.

JONES: Right.

BROCK: Is there anything else that stands out in your mind?

JONES: He never really looked at me. When we'd pass in the hall and I'd say, "Good morning." he'd say, "Good morning" and that would be it. I finally asked his secretary, who was Helen Bonfadini at the time, "Does Gordon always walk with his head down?" She said, "Yeah. I think he's afraid of being stopped." [laughter] He's going and he's got a mission.

BROCK: Right.

JONES: I didn't take it personally. He did that to everybody.

BROCK: What about Bob Noyce in those days?

JONES: Bob was very charismatic. Everybody liked Bob. He had an outgoing personality, and he was always known as "the outside man." He could meet people easily, especially the politicians.

BROCK: Did you have much interaction with Jean Hoerni?

JONES: At Fairchild? Yes.

BROCK: Would you describe your impressions of him in those early days?

JONES: Well, I never did work for Jean. I knew him when he would come into Vic's office and he was a very nice man, but he was more volatile. I guess he was the typical Frenchman. [laughter] I had a little difficulty with his accent sometimes.

BROCK: Understanding him, you mean?

JONES: Yes, but that improved as time went by, and I called him personally to tell him about Bob Noyce's funeral. He was very nice on the phone, and I think he did come to the funeral.

BROCK: Was he back in Europe at that time?

JONES: No, he was in Idaho, I think.

BROCK: Oh, okay. Right.

JONES: I don't know whether Intersil [Intersil Corporation] was the company or which one it was.

BROCK: It may have been. Just to continue down the list of the cofounders, how about your impressions of Jay Last in those days?

JONES: [laughter] Ah, I think Jay was a little younger and he was certainly a whiz in the lab. I don't know what his area of expertise was, but he got a lot of respect.

BROCK: For his technical abilities?

JONES: Yes. And he never made any waves that I was aware of.

BROCK: And how about Sheldon Roberts?

JONES: Sheldon was another one who was well respected, and he was a very soft-spoken man. He was very dignified, even as a young man.

BROCK: I think there are two others that I need to talk about. Julius Blank?

JONES: Julie was a great guy. Of course, I think, he was from New York as I am and we had a rapport. One time I told him we were doing some remodeling at home and I told him what we were looking at, and he said, "Oh no, no. You got to go to such and such a thing." He went away and he came back, maybe a couple of hours later, with all these catalogs and books on the product that he was pushing. And I thought that was very kind. I packed them up and brought them home, and my husband studied them. I don't know whether we used them or not, but he was grateful.

BROCK: And then—

JONES: There's Gene Kleiner.

BROCK: Yeah.

JONES: Gene was another great guy. He was very courteous. He never called me "Jean." It was always "Mrs. Jones." I sat with him at a banquet that was given for Gordon, honoring him at the Haas School of Business [University of California, Berkeley]. He and his wife—his wife had passed away and then Gene passed away a couple of years ago—but he and Rose were just so nice to me. I was there by myself. Gordon and Betty had picked me up and we went in the limo. They were just lovely, lovely people, just very nice. And the venture capitalists, often they're called "vulture capitalists," and that was one name you could not associate with Gene Kleiner because he was such a cultured gentleman, as was Rose. That title just didn't fit.

BROCK: Well, maybe we just have time for maybe one or two other questions this morning before you have to get going. Did you have much interaction with the folks who were downstairs on the production floor? I know there were a lot of women who were involved with operating the production equipment, especially in the assembly and in the testing.

JONES: I didn't have as much contact with them at Fairchild as I did at Intel, because we were all on one level. But one of the lab directors, or supervisors, Murray Siegel, I saw a lot of him.

BROCK: That was at Fairchild?

JONES: At Fairchild. He eventually reported directly to Vic. They had a great friendship. And he was often in and out of the office. He was another one from New York, and a neat guy, but high strung.

BROCK: [laughter] There was one of the production foremen, Robert Robson, from Fairchild?

JONES: Bob Robson?

BROCK: Yes. Did you interact with him at all?

JONES: Very little. I interacted with him more at Intel when he owned Microma. And Intel, of course, bought them out. So there were many dealings with Bob Robson at that time.

BROCK: In the context of that acquisition?

JONES: Yes. And he and Gordon were great fishing buddies.

BROCK: Right.

JONES: So, I was frequently planning trips.

BROCK: [laughter] I see. In that early period of 1959 to 1962, was there much of the social life of the company, outside of the building that you participated in? I have heard stories of some of the men in the firm going to nearby restaurants and bars in the evening. Was that something—?

JONES: I did not participate. I was newly married and I had other things to do.

BROCK: Understood.

JONES: And it was—I mean I don't want to go into that. [laughter] I'm not going to pass on all the dirty linen.

BROCK: No, but that was certainly something that all of the people have mentioned, that that was something that they did.

JONES: It was? [laughter] It got so bad that I was afraid to ask. Say I saw Gene Kleiner, I would probably, in the early days say around two or three years after I left Fairchild, I would not ask him how Rose was because he might not have been married to Rose anymore. There was a high rate of divorce among the executives of Fairchild.

BROCK: [laughter] I see.

JONES: You know that sort of thing. It was a very shaky ground.

BROCK: Right. Well, I can understand why you would do other things.

JONES: And Tom Bay was another one. Of course, I kind of put that with the marketing people. [laughter] They socialized a great deal and it put a strain on their home life.

BROCK: Right. Well, on that sort of down beat I guess we have to break for this morning.

[END OF INTERVIEW]

INTERVIEWEE: **Jean C. Jones**

INTERVIEWER: **David C. Brock**

LOCATION: **Telephone Interview**

DATE: **5 April 2006 [Interview 2]**

BROCK: This is a second interview with Jean Jones, conducted by David Brock, on 5 April 2006.

Jean I wanted to go back to the first period of time that you worked at Fairchild [Fairchild Semiconductor Corporation] from 1959 to 1962. What were your impressions of the success and the growth of Fairchild while you worked there in those years?

JONES: The growth was just constant, and I remember when we moved into the building—our first building was on Charleston Road in Palo Alto, California. It was a rented building that was not very large, but we also rented space on the street in the back. When the building on Whisman Road was completed we thought we were moving into a palace because the quarters on Charleston Road were so close. I was in an office with two other gentlemen, and if one of us wanted to leave the office the other two had to pull their chairs in.

BROCK: You did mention that.

JONES: It was very cramped. We moved to the Whisman Road building, which was a lovely, huge building, but in no time at all we were crowded. I was never crowded because of Vic's position, but other people were and the labs got smaller. Then they built the research facility on Miranda Road, in Palo Alto, and Gordon and Vic and I moved there. Then they built other buildings in Mountain View. It was a continual growth pattern.

BROCK: Were both the R&D function and the Manufacturing function in the Whisman Road building?

JONES: I think at first it was, at that time Vic was director of Engineering. He was not connected with R&D. I think R&D returned to the Whisman Road building. It wasn't until the Miranda building was finished that Vic became associate director.

BROCK: Do you recall when R&D moved into the Miranda Road building?

JONES: I would say it was probably in 1962.

BROCK: At that same time they had begun to build new manufacturing facilities in Mountain View?

JONES: Yes.

BROCK: Okay. When R&D moved to Miranda Road what remained at Whisman Road?

JONES: Manufacturing, assembly, purchasing, more administrative work, and HR [Human Resources] was there.

BROCK: Okay. With the constant growth and success there, was there a feeling of excitement at the firm?

JONES: In 1959 when I first joined the firm, we were under a mandate from Fairchild Camera and Instrument to be successful within a two-year period, and if we were not successful they were no longer going to fund us. Everyone was focused completely on that goal, and everyone worked hard. That was the part that impressed me. The senior executives worked every bit as hard as the lowly worker did, and they were extremely accessible. Everyone was on a first-name basis. It was very democratic. I'll give you an example. We hired an engineer of a fairly high level whose name was Eugene Jones. We had a paging system that was used extensively in the building. He came to me and he said, "You have got to stop using Jean Jones. You've got to be referred to on the paging system as Mrs. Jones." I said, "Why is that?" He said, "Because I prefer to be called Gene Jones." I said, "But I was here first. I don't want to stand out as being different." So, he took it to Bob, or Gordon, or somebody and the next thing I know I heard Eugene Jones being paged. I was so impressed with that. [laughter]

BROCK: How would you explain the egalitarian atmosphere at the company?

JONES: I think it was a result of their upbringing. First of all, neither Bob nor Gordon were raised in a well-to-do family. Bob more so than Gordon. I think they knew what it took to struggle, and I don't think they ever forgot it. Some of the other members of the executive staff at Fairchild did come from a well-to-do background.

BROCK: Okay. But you saw it as Gordon Moore and Bob Noyce who set the tone?

JONES: As the leadership, they set the tone.

BROCK: Was it clear to you in that early period of 1959 to 1962 that Bob Noyce and Gordon Moore had become firsts among equals with respect to that cofounder group?

JONES: I think it was natural that they just turned to them. I don't think—there might have been some resentment from someone like—and I'm just saying this because I don't know anything about it, but I think maybe Jean Hoerni who was technically very gifted, but administratively he was the pits. [laughter] He might have resented some of the prestige that was given to Bob particularly.

BROCK: When you say that administratively Jean was the pits, can you expand on that at all?

JONES: He didn't like a lot of the work rules and boundaries.

BROCK: I see.

JONES: I don't think it would have bothered him at all if some of the workers wanted to work all night. He would have thought that was great, because he was so involved in it himself. I just think that he didn't like the boundaries that were often set by business rules.

BROCK: I see. Do you think that the group of the co-founders, increasingly looked to Noyce and Moore for leadership because they combined their obvious technical ability with some sort of managerial capability?

JONES: Yes, I do. Bob was very charismatic. Gordon was not as much so, but could certainly handle himself well in public situations dealing with the community and the government.

BROCK: Okay. Was that because Gordon was very even-tempered? Why would you say he was able to do that?

JONES: Well, he was on several high-level government committees and never resented—maybe he did once in a while—having to go back to Washington. But he did it well and I think he was very interested in the results. He did his homework and he had no problem dealing with the people, even though he had never been in the military.

BROCK: I see. Well, going back to the comment you were making about Jean Hoerni and his propensity for working odd hours, what were the hours like in the early period where the firm had to meet that expectation for Fairchild Camera & Instrument? Were people working long days and weekends?

JONES: I think many people were. I did not. I worked from eight to five and an occasional Saturday. My first Saturday working for Fairchild was when Bob Noyce came to me on Friday afternoon and he said, "Jean, I understand you are a fairly accurate typist." His secretary, Mary Lou could not work that Saturday, so he said, "I have to have a paper ready for submission on Saturday, could you meet me here at eight o'clock?" [laughter] I didn't know what to expect because I was not familiar with a camera-ready copy, which is what this had to be, and it had to be done on special mats. He dictated this paper to me and I typed it.

BROCK: He dictated it?

JONES: As he dictated it I typed it.

BROCK: Did he do that from notes?

JONES: He had some notes but it was mostly just extemporaneous. He knew what he wanted to say and he said it.

BROCK: Oh, my goodness.

JONES: But it was kind of a strain for me because for one thing errors had to be cut out and corrections had to be inserted, he wasn't perfect. He looked it over and said, "I know I said this but I want to change it." We worked all day on that and he took it to the post office and mailed it. It was quite a job.

BROCK: Quite a Saturday?

JONES: Yeah.

BROCK: When you arrived at eight in the morning, were there already people there at work?

JONES: Oh, absolutely. Parking was a squeeze and you had to get there fairly early to find a place. When we were on Charleston Road it seemed as if all of the executive staff had these horrible old cars. Vic Grinich had a Studebaker. I don't remember what year it was but it was the one that looked the same coming and going, sort of rounded. He'd come in the morning and he'd say, "My battery was low this morning and I've left the car still running outside. In about fifteen minutes go out, turn it off, and lock it up." [laughter] I went out there and I found a can of something wedged on top of the accelerator.

BROCK: To keep it running?

JONES: To keep it running. I had a big station wagon. My husband liked cars. It was a big Mercury station wagon, and I don't know how many times Bob Noyce would say, "We have some customers coming in for lunch today, can I use your car?"

BROCK: To go pick them up at the airport?

JONES: Or to take them to lunch. They would get there on their own but then he would take them to lunch.

BROCK: Were both he and Gordon driving older cars?

JONES: Yes. Gordon had an older Buick. [laughter] I don't remember what Bob was driving, but Bob's cars were often—don't repeat this, but they were often not very neat.

BROCK: On the inside?

JONES: Yes. He was a smoker and he had kids.

BROCK: Okay. [laughter]

JONES: My car was more useable, let's say.

BROCK: More presentable to a customer?

JONES: Right.

BROCK: Gotcha. Did that change at all as the company became very successful in those early years or did they continue to drive the same cars?

JONES: No. They got newer cars. [laughter] Of course, when they got their settlement from Fairchild I think they got five hundred thousand dollars or something like that, Gordon bought a Porsche.

BROCK: Okay.

JONES: I don't know what the others bought.

BROCK: What were your thoughts about the youthfulness of the people who worked at the company, and the impact of everybody being so young?

JONES: Well, these men were all technically trained in some way, so they weren't all scientists but several were, and they knew that sometimes something new was needed and of course they proved that with the invention of the integrated circuit and the planar device. But they were willing to try something new because they weren't entrenched in tradition. They were willing to fail.

BROCK: Do you think that the general youthfulness of everybody who was working there also contributed to that egalitarian atmosphere that we were talking about earlier?

JONES: Yes, I think so. They were not intimidated by the management.

BROCK: What was the non-technical staff's impression of the products that the company was making, like the planar transistor, the integrated circuit, and their importance?

JONES: They were surprised. They did not understand it. I certainly didn't.

BROCK: Right.

JONES: It was just beyond my realm. They did not understand it and they were surprised but they were proud.

BROCK: Was there any attempt, as time wore on, for the company to explain to the non-technical staff the importance about the products or what the company was doing? Was there any sort of that internal communications going on?

JONES: I don't recall it that much at Fairchild because it was all so new. Most of the people employed had never—I'm thinking in terms of the administrative group, had not been involved with any technology before. So, they weren't really able to explain it. I think the executive staff could have explained it but they were so busy doing it.

BROCK: Right. Okay.

JONES: But you must remember my time there was only for that three-year period.

BROCK: Sure.

JONES: I know that might have been part of the reason for the continual education programs at Intel.

BROCK: As sort of a lesson learned from Fairchild?

JONES: Right.

BROCK: Would you describe the Intel educational activity and when that began?

JONES: I'm not exactly sure when it began, but I know that I personally got involved in it when the Displaywriter for word processing was introduced by IBM. For one thing, I had to make time and arrange to be gone from my desk in order to learn how to use the equipment. It was more than just using it. We had to learn how to unpack it. In other words, we went to this school. I think it was two full days and they delivered the box to us and we had to unpack it, set it up, and then learn to use it. I am probably the least mechanical person that you could ever come in contact with so, unpacking this box was a huge challenge to me.

I must tell you what happened when the Displaywriter was delivered to me. It was during the Christmas holidays and Gordon was kind of bored. There were a lot of people missing on vacation and so forth, and he said, "Jean, are you ever going to open those boxes?" [laughter] I said, "I don't know. I'm putting it off as long as I can. I've got this, or that, or the next thing to do." He said, "Why don't I take a crack at it?" He proceeded to unpack the boxes and set it up. "Where do you want it?" He was crawling around on the floor finding outlets to plug in different things and we were in cubicles at the time and people would walk by and they'd see Gordon doing this and they wondered what on earth was going on. [laughter]

BROCK: When was that, do you think?

JONES: We were in Santa Clara Four at the time, we moved into One in 1971. It was probably 1974 or 1975.

BROCK: Okay, this was pretty far along into things?

JONES: Yes.

BROCK: Do you think that's a kind of a revealing story about Gordon?

JONES: Absolutely. I could tell you more. [laughter]

BROCK: Please do.

JONES: Well, one stands out, and this is one that I've told to practically everybody. My husband died when my youngest son was fourteen, and when he graduated from high school, they were preparing the yearbook. That morning he said, "I'm getting my picture taken so I have to wear a shirt, a tie, and a sport coat today." I said, "Well, that's fine." He said, "No it

isn't, because I don't know how to tie the tie." [laughter] I said, "Well, I can't help you Randy." I tried and I couldn't do any good. I said, "The photographer will know how to do it, or one of the other boys will be there to help you." Everyone had an appointment to go. He went and he called me from the photographers and said, "Mom, first of all the photographer's a lady. She doesn't know how to tie the tie, and there's nobody else here that can do it." I turned to Gordon and I said, "Gordon," and I explained what happened, "Do you think you could teach him how to tie his tie over the telephone?" He thought for a minute and he said, "Yeah, I think I can." The next thing I see he's got his collar open, and his tie off, and he's getting all set. [laughter] He gave Randy instructions on how to tie his tie over the telephone. When I got the picture I brought it in and showed Gordon what a good job he did. [laughter] A lot of men would not have done that who were in Gordon's position.

BROCK: What do those stories mean to you? What do they say about the type of person he is?

JONES: He was a very real human. In the early days of Intel there was a strong movement by the unions in the area. They wanted to unionize the technology companies. Gordon was not in favor of it. I said, "Well, what is your main objection?" I personally did not want to be involved with unions either because I had seen some practices in the past that I didn't approve of.

BROCK: At the aircraft company?

JONES: Yes.

BROCK: Okay.

JONES: He said, "We try very hard to provide a good working environment and I would feel terrible if somebody who worked in this company, felt that he was not being treated fairly, and couldn't come to me and tell me about it, but he would go to a union representative to discuss it."

BROCK: How did he and the others respond to that unionization push?

JONES: I don't think they did anything very great but they felt they were providing a very—they paid well, the benefits were excellent, the environment was clean, and safety was strictly adhered to. I don't think the unions had a chance.

BROCK: Right. From your vantage point, did you see that sort of communication from the staff up to Gordon or to Bob about workplace issues?

JONES: Oh yeah.

BROCK: A communication flow was there?

JONES: Absolutely. Many times employees would come to me and tell me their problems. One case that comes to mind was a woman who had been a technician, and a single mother. But she had done it for several years and she was kind of tired of it. She went to her personnel representative and said, "Are there any other jobs that I could do? I think that I'd like to make a change." The representative said, "Well, we have some type of clerk's job." The girl said, "Do you think that would be good for me?" The representative encouraged her to take it. No one told this woman that it would mean a substantial cut in pay, and she came to me and said, "I don't know what to do. I don't think it's right. I cannot live on this." I said, "Are you sure no one mentioned it?" She said, "Absolutely not." I told her I would see what I could do. I talked to Gordon about it a little later, and he said, "Well you run this down and find out, because that should not have happened." So, I did and the woman came back to me about a week later and she said she had her old job back, she was happy as could be, and she was never going to change jobs again. Gordon did not have to get involved, but the fact that he knew about it was enough.

BROCK: I see. Was that characteristic of the way that he would use his influence in the company?

JONES: Yes, low-key.

BROCK: Yeah. With him being low-key, if he was expressing an interest in a situation, did people know that it was something that had to be addressed?

JONES: Absolutely.

BROCK: So, if he had a question people could readily understand that that meant it was something he wanted addressed?

JONES: Right.

BROCK: Okay.

JONES: He never did anything halfway.

BROCK: What do you mean?

JONES: If he was interested in something he pursued it and from all angles.

BROCK: What would he do with something that he wasn't interested in getting into all the way? Would he pass that along to someone else?

JONES: Yeah. [laughter]

BROCK: And how would he do that pass-off?

JONES: Well, he would simply say—first of all his understanding of the people who reported to him was very good, and if this was something that he thought Joe Blow would be interested in, or had an interest in, then he would talk to him about it and say, "Do you think this is worth following up?" It would depend on what the individual said. But Gordon knew what he wanted to take on and what he didn't.

BROCK: Would he use his sense of what other people were interested in to make that hand-off as smooth as possible?

JONES: Right. He also recognized that they would probably do a better job, and many times the people involved would be really happy to do it.

BROCK: Could you characterize the things that he would want to keep as an issue to deal with and the issues that were not of interest to him, or that he thought other people could do better? Did that cut along sort of standard lines?

JONES: He knew pretty well what he wanted to do and what he didn't want to do, and every year there were certain speeches that had to be made, there were certain reports that had to be written. In the early days of Intel, particularly, I don't know how it was at Fairchild because I don't think he was that involved when I was there, but at Intel people would write these speeches and reports for him, and in the first several years he would throw them out completely and rewrite them himself, because there was something in the presentation that didn't suit him. It was just amazing. When the financial reports were being submitted to the SEC [Security and Exchange Commission] or to the different federal agencies, Gordon would go over them with a fine-tooth comb before they were sent. This was after the finance people had fine-tuned them, after the attorneys had looked them over, and after the auditing group had surveyed them. I can't remember how many times he found, not errors exactly, but things that he wanted corrected so that they reflected exactly what happened.

BROCK: You mean in going over the figures?

JONES: Not just the numbers, the footnotes and everything.

BROCK: Wow.

JONES: You couldn't give Gordon a set of numbers that he could forget. It was just absolutely amazing. Of course, because I don't do numbers I was perhaps more impressed. [laughter]

BROCK: What do you think was behind that scrutiny of all the financial things? Was he interested in the financial dimension?

JONES: I think he had an understanding of numbers and how they related to one another. He also had a knack for detail, and I think it was that combined talent that they used.

BROCK: Going back to what you were saying a moment before about how Gordon was clear about what he wanted to do and what he didn't want to do, let's talk a little bit more about what the things were that he was sure he wanted to do, like these financial reports and writing his own talks? Were technical matters about the technology what he would generally want to do?

JONES: I think, yes, in the early days, but as time went on he was more into the vision and positioning.

BROCK: Strategy?

JONES: Yes.

BROCK: Okay. What were the sorts of things that he would never want to do?

JONES: [laughter] In the early days I don't think he would ever want to be bothered with the politicians.

BROCK: The local politicians?

JONES: Any of them.

BROCK: Okay.

JONES: They were palmed off to Bob. [laughter] But later on he got pretty good at it, and I guess he realized he had to do it. I think anything that was connected with Intel, he was going to give it his best shot.

BROCK: Right. When you started working exclusively for Gordon around 1980, the two of you worked very closely together then for sixteen years. Tell me about your working relationship with him—did you serve as a filter for him, or a gatekeeper for him? Did he rely on you for a more informal passive communication, like the issue with the woman who had been the technician?

JONES: Oh yeah.

BROCK: Would you talk about that?

JONES: I certainly was the gatekeeper and I was a filter for employee issues. I'm not sure he asked for my opinion, but he usually got it anyway. [laughter] But he knew that I was totally dedicated to the company, and that if I thought something was important enough to pass on to him he would treat it that way. Of course, many things went on that he was totally unaware of, minor issues.

BROCK: Right. Things that you would become aware of but decide it was—

JONES: I could talk to people about different things. I could call a manager and say, "This happened or that happened. Can you look into it?" They would never question me. They would come back to me a day or two later and say, "You were right. This happened and we are correcting it." So, many things went on that Gordon was really not filled in on.

BROCK: Do you think that he was aware that you were handling a certain basket of problems for him?

JONES: I think he was. He said that I "made his life easier." I think he put that on one of my performance reviews. I must tell you, speaking of performance reviews, this will just give you a little insight. At one time, we had a form that was—an individual's work performance was graded on whether you met requirements, did not meet requirements, exceeded requirements or were considered excellent. First of all, in Gordon's mind nobody was ever excellent. However, there was one category, attendance, and he marked "meets requirements." I had not had a day off in ten years at that time. I had never been sick a day. I had vacations, but I'd never missed a day's work other than that. I looked at him. I had seen this before, but this time I said, "Wait a minute. I have to object to this point." This form had been through all of the personnel records and everything was done on it. I was seeing it at the last minute with no chance of having it changed. I said, "What does it take to get excellence in attendance?" He said, "I wouldn't know. All I know is you meet my requirements." [laughter] I said, "Well, for your information I haven't missed a day, other than vacations, for ten years." He said, "Oh, is that so? That's very good." So, he put "More than meets requirements." [laughter] But no "excellence." About a week later, or maybe just a few days, two dozen roses were delivered to me, and a huge cake, and everybody was invited to celebrate my ten years of perfect attendance. [laughter]

BROCK: He did that on his own?

JONES: Yes he did. [laughter]

BROCK: But he still didn't check off the box marked excellent? [laughter]

JONES: He wouldn't alter it, but I got my point across.

BROCK: One last question in this area. Let's talk about Gordon's sense of humor and whether the two of you shared a similar sense of humor?

JONES: Absolutely. We had to. [laughter]

BROCK: How would you describe his sense of humor?

JONES: First of all it's very keen, but one time an investment broker, or financial manager, or some company sent him a little gold paperweight and it was shaped like a brick. I said, "Well, that's a very pretty paperweight Gordon." And Gordon said, "Yeah, I wonder if the guy's trying to tell me something?" I just broke up. I thought if anyone was trying to call him a goldbrick it was just not going to work because nobody worked harder than he did. I said, "Well, he obviously doesn't know you very well." He had a great sense of humor. We shared many a laugh.

BROCK: Did the two of you have a sort of a joking or a kidding sort of mode of conversation during the day?

JONES: It was just friendly. Often it was very businesslike, but occasionally something would happen that was very humorous.

BROCK: Okay.

JONES: We never saw one another after work, or after hours, or anything of that sort. I had great respect for Betty and his family. When there would be Intel functions and my husband and I would attend, my husband would always say, "If Betty isn't going I'm not." [laughter] He looked on her as an ally.

BROCK: Right, as a friendly face in a room of strangers. Did you get to know his family somewhat over that long period?

JONES: Oh yes. The boys were great. When my daughter got married, I felt very uncomfortable asking but I asked Gordon if his son Steven would consider letting us rent his car. He had a 1938 Cord, I think, that was fully restored, a beautiful vehicle, to drive them from the church to the reception. He said, "Well, I'll ask him." So, he came back the next day and said, "Steve would be delighted to drive them." It was a convertible. Anyway, it was a lovely

addition to the wedding. Steve would not accept any reimbursement or anything like that. It was just very nice.

BROCK: Oh, that is very nice. Let's shift back to your experience at Fairchild for a couple questions. When you joined Fairchild in 1959, had Ed [Edward] Baldwin already departed from there?

JONES: Yes.

BROCK: Okay. Did you start pretty soon after he had left?

JONES: I think so. I joined Fairchild around the end of May in 1959. I remember I missed out on the Memorial Day holiday pay somehow. [laughter]

BROCK: When you joined, was Bob Noyce acting as the general manager?

JONES: Yes he was.

BROCK: Do you have any thoughts or impressions about how he was fulfilling that role in those early years?

JONES: I think he was learning as he went.

BROCK: Okay.

JONES: But once again, it was a job he embraced. He was still technically active, and I think that the job probably required full-time attention to administrative things, but he was reluctant to give up the role in technology. He did a great job.

BROCK: I've heard a couple people say that in his way Bob Noyce was like Gordon, non-confrontational? Did you see that in the early period or later at Intel?

JONES: I don't—Bob could be confrontational. More so than Gordon. I've never seen Gordon attack, so to speak, but I have seen Bob do it.

BROCK: Okay. We spoke a little bit about some of the issues that you brought up in that e-mail that you sent to me recently where you were talking about the differences in the working conditions that you found at Fairchild from the places that you had worked before, because everyone was working toward a common goal? Do you feel that we covered that pretty well?

JONES: It was just an absolute environment of cooperation. No one had their own agendas. It was just an absolutely marvelous—and I felt much the same thing at Intel when it started. It was just a great atmosphere for working.

BROCK: There was something in your e-mail to me that caught my attention. You wrote that it was such a good working environment because everyone was working toward a common goal. Then you wrote, "There were no hidden agendas or egos at that time. The egos developed later."

JONES: Yes.

BROCK: While you were there in 1961, Jay Last, Jean Hoerni, Sheldon Roberts, and I think Bob Robson all left to form Amelco [Amelco Corporation]. Is there any connection between what you were writing about egos and their departure?

JONES: Probably, but I was thinking more in terms of years later. I remember when they left it was a case of they felt they had to do it because the opportunity was there. They wanted to take advantage of it. I also think they felt that Fairchild was doing so well they weren't as needed. But there's no doubt, Jean Hoerni certainly had a king-size ego. I'm not sure it was in the early days but he certainly had it later on. Jay Last was a laid-back kind of guy. Sheldon was the quiet one, I didn't know him very well, but I think he was just carried away.

BROCK: What sort of impact did their departure make on the firm? Was it a big noticeable thing or was there a lot of talk about it? What do you recall?

JONES: I don't recall very much about it, so that makes me think they—I think they [the cofounders of Fairchild] just wished them well. I don't think there was an impact on the bottom line, so to speak, at Fairchild. I think they had an opportunity and they should go for it.

BROCK: To go back to what you were saying about the egos developing later, you're saying "years later," was that years later at Fairchild?

JONES: No, I meant years later in their own careers. I think I might have possibly been referring to Bob Noyce. Bob developed a pretty good sized ego too. [laughter]

BROCK: Was that something that you think had an impact on how things played out at Intel and him sort of doing more outside stuff in the 1980s?

JONES: No, but I think his outside work enhanced his own self aggrandizement. He was really quite different in many ways but still very approachable.

BROCK: You mean that you saw a change in Bob Noyce from when you first met him at Fairchild, to how he was by the 1980s at Intel?

JONES: Yes. Bob had always been a womanizer, but it kind of got out of hand.

BROCK: And that was something that was impacting the workplace?

JONES: It was impacting his workplace. [laughter]

BROCK: I see. His attention and things?

JONES: To some degree. I don't think he ever thought his first wife would divorce him and that shook him up tremendously.

BROCK: Did that all happen while you were working for both Bob and Gordon?

JONES: Yes.

BROCK: Was that uncomfortable for you?

JONES: It was. It was very uncomfortable. One day Betty Noyce called and just screamed at me over the phone.

BROCK: At you?

JONES: Yeah. She thought that I was a friend and that when I arranged travel arrangements for him and this other woman to go to Japan and to do all the different things "I was no friend to her," and she just went on, and on. I said, "I didn't know that she went to Japan with Bob. I only arranged his travel." I don't think she believed me, but that was true. Bob was very adept at managing his own affairs. [laughter] I was very upset.

BROCK: Oh, I can imagine. Did that brouhaha begin to affect your working relationship with Bob Noyce?

JONES: To some degree. But my biggest concern was for the children. His wife took the children to Maine for the summer at the time that they were discussing this divorce. Then the kids came back in September but Betty did not come with them. The youngest girl, Margaret, was maybe ten. She was just a little young girl. I was always doing something with those kids, whether they were calling for suggestions, or one morning Margaret called and said, "They didn't wake me up for school. How am I going to get to school? I'm all alone in the house." I said, "Do you know how to get to your school?" because I didn't know the way. She said, "Yes." I said, "Are you ready to go now? Are you dressed?" She said, "No." I said, "Well, you get dressed and I'll come and pick you up." I didn't know where Bob was. I went, I picked her up and she gave me very good directions to get to the school, Ford Country Day School. It was a private school. I got her there and I said, "Did you pack your lunch?" "Or do you need to do that? Is there anything more I can do to help you?" She said, "No. I don't think so. I'll get lunch here." She was all set, and I let her out.

When I got back to work Bob looked at me kind of funny when I walked in. I said, "Now, don't look at me like that. I just took Margaret to school." And he said, "Why?" [laughter] "Because she didn't wake up." He said, "Oh. Well, thank you very much." There were many times I had to go pick them up at different places.

BROCK: Was that something that you and he discussed or was that just something that you were doing because you felt that you needed to?

JONES: Well, I felt that somebody needed to do it, and he was not available.

BROCK: Because he would be traveling, or working?

JONES: Yes. Or something would come up unexpectedly.

BROCK: Did he ever talk to you about the fact that you were doing these things for his children?

JONES: He never mentioned it. That was okay. I mean, I didn't expect it. It was just something that I thought had to be done.

BROCK: Yeah.

JONES: There did not seem to be any support system for Bob, no friends that he could call. Maybe there were. I don't know.

BROCK: If there were people that he could have called, it doesn't sound like he did?

JONES: Right.

BROCK: Have you read this biography of him written by Leslie Berlin [*The Man Behind the Microchip*]?

JONES: No, I haven't, but I contributed to it.

BROCK: Okay. Well, there's a certain sense in which the book's trying to figure out what made Bob Noyce this larger than life and charismatic figure, this sort of industry icon. In some ways, when I was reading the book I didn't feel that that was answered so much. The fact that he became this larger than life figure was documented, but I don't know if it's fair to expect a book to be able to explain how that sort of thing would happen. Do you have thoughts about that general area, about what contributed to him becoming such an iconic figure.

JONES: Well, first of all he had three brothers and all four of the boys achieved Ph.D. degrees. I believe, with the exception of the youngest one, Ralph, they were extremely competitive. Bob was a very competitive person.

BROCK: In what ways did you see that competitiveness expressed?

JONES: In his sports activities.

BROCK: Okay.

JONES: He played tennis. He swam, he skied. He loved games, and I think he missed that at the time of the divorce when the kids all moved east.

BROCK: You mean board games, card games and that stuff?

JONES: Board games, card games. They were all musically talented too. There would be a lot of time spent together. But he gave up an awful lot for his business pursuits.

BROCK: It's interesting that we're talking about competition, because one of the questions I had written down to ask you about was the competitiveness among the cofounders of Fairchild, both while they were working together at Fairchild and then afterward in their subsequent separate careers. Do you have any thoughts about that?

JONES: Well, I think there probably was a degree of competitiveness. It was mostly with people like Eugene Kleiner and Jean [Hoerni], but I don't remember competitiveness with Gordon and Bob.

BROCK: Between the two of them?

JONES: Right. There was competitiveness between Andy Grove and Bob.

BROCK: What did you see that makes you say that those two were competitive with one another?

JONES: Well, Andy was always very excitable and he would raise his voice and that sort of thing whereas Bob never did. But Bob would try very hard to prove his point and I'm not sure Andy always accepted it, but he had to accept some things. I wouldn't be surprised if that wasn't part of the reason that Bob decided to pursue other things.

BROCK: These arguments with Andy Grove?

JONES: Well, not arguments so much as not wanting to have to fight for everything.

BROCK: Okay. I see what you mean.

JONES: But I'm not sure. That's just supposition on my part.

BROCK: That's your impression?

JONES: Yeah.

BROCK: I'm just thinking about the physical environment with everybody in the cubicles with the relatively open—was Gordon's cube near Bob's, with you nearby? Was Andy nearby? How was that spatially?

JONES: No. Andy was usually separated by a few floors if possible. [laughter] Or a building.

BROCK: Was that his choice?

JONES: I think so. I think he wanted to make his own stand and not be in Bob's or Gordon's reflection. But I don't know whether that was the case or not. I do know that he was always very physically separated from them. After we moved out of the first building there on Bowers, to Santa Clara Four, Bob was downstairs and Gordon was upstairs, and I think that Andy was still over on Bowers.

BROCK: Okay.

JONES: But Bob was located near the legal department.

BROCK: Why is that do you think?

JONES: Well, he and Roger Borovoy were very good friends.

BROCK: Okay.

JONES: And that was around the time of Bob's divorce. And I think it was—I don't know if you heard this story or not but Bob had bought a seaplane.

BROCK: A seaplane?

JONES: A seaplane. A Seabee that he had delivered to someplace in Massachusetts, or somewhere on the East Coast, to have it refitted and brought up to all the legal codes and so forth. When it was ready he and Roger flew back to the East Coast and picked up this plane and flew it back. But on the way back [laughter]—this was not really funny but it was in a way—they were flying over Great Salt Lake [Utah] and the plane went down. It lost altitude or something, and they had to abandon it and swim to shore. It was frightening, but Bob had it resurrected. He had it pulled up and repaired again. But he and Roger had quite a heroic tale to tell. [laughter]

BROCK: Okay. Initially when you were on Bowers, were Gordon and Bob near one another with you?

JONES: Yes. That was the building with private offices.

BROCK: Okay.

JONES: We had a suite of three. Gordon was on one side, Bob had the corner office, and mine was in the middle.

BROCK: Okay. When you moved to Santa Clara Four, was that a cubicle type of situation?

JONES: Right.

BROCK: And then were you upstairs next to Gordon's cubicle?

JONES: Yes.

BROCK: Okay.

JONES: I have another insight for you. This was not a building that Intel built. It was a building that had been built on spec that we purchased. We had an earthquake team go through it, and they decided the most vulnerable place in the building was Gordon's office. [laughter] They wanted Roger Borovoy to trade with Gordon, and Roger said, "If it's not safe enough for Gordon it's not safe enough for me. I'm not moving." [laughter] I said to Gordon, "Where do you want us to move, Gordon?" He said, "We're not moving. We're staying right there." I said, "Is that your final word?" "Yeah." And we stayed. [laughter]

BROCK: He was unconcerned?

JONES: He was not worried about it at all. [laughter]

BROCK: In the time period between 1962 and 1968, when you were—

JONES: Only working once in a while?

BROCK: Yes. I was wondering about your impressions with those snapshots over time when you would go back? How did the company seem to be changing?

JONES: Well, of course it was still doing very well. It was successful, but there was a looseness in the workplace that was somewhat disconcerting to me, because I felt people were not doing their best. I mean that from managers on down.

BROCK: Was this while you were subbing at the R&D lab or when you were going all over the place?

JONES: I'm thinking particularly about when I would sub for Mary Lou Weiss, who was Bob Noyce's secretary.

BROCK: Okay. He was not in the R&D Lab?

JONES: No. He was not. I think he was still on Whisman Road. He had a constant stream of people coming into his office and I would have many people waiting in my office to meet with him. But just the conversations that I heard, when they were speaking among themselves it was all fun and games and more than a little hanky panky. I was disappointed, but I never mentioned it to anybody. This is the first time I think I've ever voiced it.

BROCK: Do you think that's just in the nature of it getting to be such a big place that it was—

JONES: I think that plus the fact that they could do it. Let's put it that way. It was new to all of them and they were finding their way, so to speak. But they knew that they could get away with this kind of stuff.

BROCK: Just to clarify, you're talking in terms of getting away with doing less than their best work?

JONES: Absolutely. I mean, secretaries would take two-hour lunches without any hesitation, and their bosses would not say a word. It was not the case of having to run an errand or do anything of that sort. It was just lunch.

BROCK: Let's turn to the first year of Intel. It sounds like a return to almost the sort of atmosphere that you had found at Fairchild in 1959?

JONES: Correct.

BROCK: Was it similar in terms of that smallish group in a relatively crowded space who were all working for a common goal?

JONES: Yes. The difference was that some of the directors who were hired came with built-in expectations, and they weren't quite as dedicated. Of course, they didn't last too long either.

BROCK: You're referring to some of the initial key hires who came in?

JONES: Yes. I'm thinking in terms of Richard Bohn and another man, Skip [Gerald "Skip" Fehr].

BROCK: Those names aren't familiar to me.

JONES: They really had big expectations, and they were not quite up to the job, I don't believe.

BROCK: These are people who had come from other companies?

JONES: They came in to fairly high-level positions.

BROCK: But they did not stay that long?

JONES: No.

BROCK: Okay. I know that it was about a year until Intel introduced its first product. There was a lot of work going on to develop the silicon gate technology, in order to make this memory product. I was wondering how that big technological effort contributed to the atmosphere? Was that the center of discussions?

JONES: It was certainly the focus of the company and we had more—practically every employee was technically oriented, so they knew a lot more about it than I did. I was just busy keeping up with opening the mail and other things. I don't know. I can't answer it.

BROCK: Okay. In the first year of Intel, did you see the formation of that egalitarian no-nonsense, hard-driving work environment?

JONES: It was even more so at Intel than Fairchild. When Fairchild built their building on Whisman Road, everything was done beautifully including the furnishings in the offices. They had interior designers do the offices of the executives. Vic took one look at his office and he said, "I hate this. It's orange." [laughter] That was a very popular color at that time. I had to call the designer. He came in, and he was offended by Vic's obvious rejection. Vic had a war surplus old gray desk with a linoleum top and he moved it into this office. He moved all the fancy furniture against one wall and he put this ugly old thing in there. The furniture was moved out and some new stuff was custom made in the colors that Vic preferred. It was just—I'm trying to say there was extravagance that was never seen at Intel.

BROCK: It was just much more utilitarian?

JONES: It was good—what was it Bob Noyce said? "We will provide everyone with the tools that they need to get their job done, but it will not be done with flair." [laughter] That was true.

BROCK: Was that an expression of Bob's and Gordon's values?

JONES: Well, I think it was that, plus the reflection of the waste that it turned out to be at Fairchild. They had been there and done that and they weren't going to do it again.

BROCK: I see. Do you recall them ever talking about that explicitly?

JONES: No. That's just my interpretation.

BROCK: Okay. Let's talk about some of the other early Intel employees. I have a list of people I'm familiar with who seem like some key people, and maybe you'll have some ideas of people that I've missed. Let's talk about Andy Grove a little bit, about your impression of him in the earliest years of Intel, and his contributions.

JONES: I did not know Andy at Fairchild.

BROCK: Right.

JONES: I did not meet him until the first day at Intel.

BROCK: Okay.

JONES: I was surprised by his youth and by his obvious sense of command. He knew he was in charge.

BROCK: From the very beginning?

JONES: Yes. There are several things that stand out in my mind. First of all, he was kind of rough and very businesslike.

BROCK: To you or to everyone?

JONES: To everyone. But he had a heart of gold. I remember the first Christmas, most of the employees who came from Fairchild, the assembly workers and the technicians, wanted a party. Intel didn't want to take the time for a party, so they declared they were going to have a holiday party in January. But this didn't set too well. I was relieving the switchboard at lunchtime and Andy came out and he crouched down next to me in this little booth and said, "Did you know about this?" I said, "Well, I knew there was some unrest about it but I didn't give it much of a thought to tell you the truth." He said, "Why didn't you tell me?" I said, "It didn't bother me one way or another whether we had a party or not." He said, "Whenever you hear things like that, Jean, you should come and tell me." I said, "Okay." So, the next day we're getting closer to the holiday and he came to me in the morning and said, "You know, I think the girls in assembly are drinking." I said, "Well, I don't know. They could be." [laughter] He said, "I want you to find out." I said, "Look, I'm not going to go and rat on these people." He said, "They're all gathering in the—" there was a little kind of nurse's station that they used as a meeting room that connected to the ladies' room. He said, "You go in there and visit for a little bit and when you come out you just either nod or shake your head, that's all." So, I went in there and the first thing they did was hand me this paper cup filled with orange juice and vodka that I could barely swallow. I stayed about fifteen or twenty minutes and then I left and I nodded my head. [laughter] He gave everybody the day off.

BROCK: He did?

JONES: Yeah. [laughter] This was early in the morning, like nine o'clock.

BROCK: Oh my gosh.

JONES: So, he was right. He was wise to do that because the production would not have been any good.

BROCK: Yeah. That's funny. Were you working with him during that first year?

JONES: Not very much. He pretty much did his own thing. At that time Andy was very hard of hearing, and he wore a headset with a battery connection that he hid under his shirt, so his office door was usually closed because he'd be talking on the phone and he'd have the phone down on his chest so he could hear it.

BROCK: I see.

JONES: He pretty much ran the production and development part of it. But this story is kind of funny. At my retirement party, Andy got up and said, "Jean, I'm going to tell you a story and I don't think we've ever discussed this," and we never had. He said, "When Gordon told me that he was hiring someone to work as the secretary I thought, 'Oh no,' because I didn't like his secretary at Fairchild." Helen Bonfadini was an abrasive person. So, if you combined that with Andy, it would have been combustible. [laughter] He said, "I have to admit that this time Gordon's choice was good."

BROCK: Could you talk about Les [Leslie] Vadasz, your impressions of him, and what he was doing in the earlier years?

JONES: Les was another surprise because he was a shy man, and his Hungarian accent was much stronger than Andy's. [laughter] But he was obviously a hard worker. He had two young boys at the time. He was not a womanizer at all, whereas Andy was. I'll just add that little footnote there. I don't know if he is anymore, but he was in those days.

BROCK: Was he single at the time?

JONES: No, he was married, and his wife Eva was supposed to have said, at one time, "I might kill Andy but I'd never divorce him." [laughter] So, I think she was aware. I liked Les. I admired Les.

BROCK: For?

JONES: His office, when we were in Santa Clara Four, was very close to Gordon's. Then when we moved to another building they were side by side. I interacted with him quite frequently.

BROCK: Did he and Gordon frequently work together or have meetings, or—

JONES: I think so. Especially when Les took over that Business Development area, they were frequently in touch.

BROCK: I see. Another figure from the earliest days was Gene Flath.

JONES: Yes.

BROCK: Would you tell me a little bit about your thoughts about him and what he was up to?

JONES: Well, he was another one of the younger guys and he was very dedicated, a nice guy. At one point he and I got off on the wrong foot because in the early days we had a conference room where the Board would hold their meetings. The lunch that was served to the Board was strictly deli sandwiches. I would call the order in, go pick it up, and bring it back. It would be deli sandwiches, Cokes, and potato chips. Not a big deal. Our facilities manager came to me and said, "Why don't we just put the bags out on the table, of potato chips and things of that sort?" So he used some type of glass lab equipment that served as bowls to hold these chips. The next thing I know Gene Flath was absolutely enraged that I had contaminated his lab equipment by putting potato chips in it. [laughter] I said, "First, I didn't know that I was contaminating it. And secondly, it wasn't even my idea." Well, then it turned out that these lab bowls were to be returned because they weren't exactly as ordered. So, there was no harm done. Do you think he came and apologized? No. [laughter] I kind of wrote him off for a while. But I wasn't upset over it because I didn't feel I'd done anything wrong. Then we got to be good friends after a while. I like Gene Flath.

BROCK: Was he the real Manufacturing person?

JONES: He was in charge of magnetics for the short time that Intel was involved in it.

BROCK: Okay.

JONES: The development of magnetic—

BROCK: Memory?

JONES: Yeah.

BROCK: I think we talked about Bob Graham, the first Marketing person a little bit the last time we spoke, but maybe we could talk about him again?

JONES: He was a very knowledgeable, nice guy. I liked him. But talk about ego. I think that was why he and Andy Grove did not get along.

BROCK: They would often just clash in terms of their—

JONES: Yeah. They just rubbed one another the wrong way, and Bob would gloat.

BROCK: About it?

JONES: Yeah. He would say, "Customers come first." [laughter] That was all there was to it. End of discussion. I don't know whether I told you last time or not, but Bob Noyce and Andy joined together to fire Bob Graham when Gordon was on vacation and out of touch. Gordon returned from vacation and learned that Bob Graham was no longer part of the company.

BROCK: Did that upset him?

JONES: Gordon? I think it did to a degree because he and Bob Graham were great personal friends. They went fishing together and that sort of thing. But I think he recognized, for the good of the company, Bob's and Andy's personalities were not going to work, and Andy was more valuable.

BROCK: Had Bob Graham come over from Fairchild?

JONES: Not at that time. He had been at Fairchild, but he came from IT&T [Information Technology and Telecommunications], along with Bob O'Hare.

BROCK: I don't know Bob O'Hare.

JONES: He was a salesman.

BROCK: Okay.

JONES: Those two were the Marketing Department.

BROCK: The two of them? Okay.

JONES: In the early days when we would run an ad in the newspaper for engineers or technical people, or for any employees that we needed, it was a case of, "Call Intel at this number, and ask for Bob." You'd get Bob Noyce, Bob Graham, or Bob O'Hare. [laughter]

BROCK: How about another person on the technology side, Tom [Thomas] Rowe? I think he was a very early employee?

JONES: Yes he was. Tom was a neat guy who developed some psychological problems and was burnt out. He worked too hard and his wife divorced him and it was very sad. I don't think he's really worked since. That was a long time ago.

BROCK: When did he leave the company?

JONES: I'd have to say early 1980s. He was a nice guy, until he went bananas.

BROCK: Just from overwork, you think?

JONES: Yes. There was a lot of stress.

BROCK: How did you see different people coping with the stress at different periods? Let's just take Grove, Noyce, and Gordon Moore. How did they contend with the stresses that were involved?

JONES: First of all Gordon had a wonderful outlet in his family, and he did not let anything come before his family.

BROCK: In terms of work demands?

JONES: Right. He was always there for them. I don't know how Bob handled it. He had so many commitments outside, like his madrigal singing group, and his own family too, I'm sure, helped. I really know very little about Andy Grove except later on he became—he was always obsessed with health. When he moved to Los Altos Hills his house had a tennis court and he played tennis with a great deal of vigor, and then he took up skiing and was very active in the wintertime. But he always watched his diet. He ate cottage cheese and V8 for lunch for years. [laughter] I don't know how he could do it. It was out of a vending machine.

BROCK: Out of a vending machine in the office?

JONES: Yeah. And a little carton of cottage cheese with chives or something in it and a can of V8 juice.

BROCK: What did Gordon and Bob do for lunch, normally?

JONES: Bob frequently went out for lunch, but Gordon would eat anything. [laughter] Many times I went down and got my lunch before the crowd, and he would take a look at my sandwich and would say, "What is that?" I'd tell him whatever it happened to be. He would say "Oh." Then I would ask him, "Would you like half?" He would say, "Yeah." [laughter] So, whatever sandwich I made he would eat half. But if he had his druthers it would frequently be roast beef and Swiss cheese, with a tomato, on wheat bread.

BROCK: Okay. To return to my list of people, there was Ted [Marcian E.] Hoff, I think he was one of the early hires also?

JONES: Neat guy.

BROCK: Could you tell me a little bit about him?

JONES: First of all he was very young, and he had come from the academic environment at Stanford [Stanford University], he wasn't used to industry. At first, I don't think he liked the interruptions but he was a very polite guy. He'd die before he'd complain or snap at you. He was given the task of designing the chips for the Busicom [Busicom Incorporated] calculator, and that's when he decided to combine the four functions on the one and, in effect, create the microprocessor. But he would study things quietly. He did everything kind of quietly, but he commanded tremendous respect.

BROCK: I know Federico Faggin came a little bit later to work on that same Busicom chip.

JONES: Uhm-hmm. And Stan Maser.

BROCK: What can you tell me about those fellows?

JONES: Stan Maser, I think, also came from the lab at Stanford, but I'm not sure about that. I think that he and Ted knew one another.

BROCK: Okay.

JONES: Federico came from Fairchild, and was—have you met him?

BROCK: Never.

JONES: He's a short, very good looking, dapper Italian. Very—what can I say, he's dynamic and he commands your attention. Apparently, as time has shown, he had an enormous ego because he never felt he got the credit that he deserved for—he didn't invent the microprocessor but he certainly managed the manufacturing process of it. He didn't feel he got enough credit for doing that. And his wife didn't either. She was kind of—

BROCK: His champion or something?

JONES: Yeah, and aggressive, more so than he was.

BROCK: He also left pretty early on?

JONES: Yes. He was a devoted family man too. I remember one of the picnics I was sitting under a tree and he came up with his little daughter. She was just a baby, maybe six, seven months old. He and I sat under that tree for a long time, taking care of the baby.

BROCK: Well, if you think about the real first group of employees, who have I missed that we should talk about? People that were there in that first year, let's say.

JONES: I'm trying to visualize the office structure, because of the way they were laid out. Skip Fehr was in charge of the assembly area, and Dick Bohn—

BROCK: That's a name I've heard.

JONES: I forget what he was in charge of, but he came from Transitron [Transitron Electric Corporation]. He didn't stay out here too long. When he left Intel he went back East. Bruce McKai.

BROCK: What did he do?

JONES: Bruce was in charge of the—he worked for Skip I believe. He was a supervisor, but a really neat guy. I think he came from Scotland or England. He was a hardworking supervisor too, everybody had a lot of respect for Bruce.

BROCK: Maybe I could pepper you with just a few more questions and then we'll find a time to chat again?

JONES: Okay.

BROCK: In that first year while the firm was developing the first product, what were your impressions about what Gordon was doing, what his days were filled with?

JONES: He was in constant contact with the labs. He checked the progress. He studied the trends. I would hold his mail for maybe a week.

BROCK: Really?

JONES: Yeah, at that time. He didn't get a whole lot of it, first of all, but he didn't have time to deal with it either.

BROCK: Because he was so closely following what was happening with the technology?

JONES: Yes. Bob, in those days, was busy drumming up interest in the company. They were all very busy writing papers.

BROCK: As a main way to get some attention?

JONES: Right, for the Intel name. They were always dealing with prestigious conferences and things of that sort.

BROCK: That was not just Gordon and Bob, but there were other people as well who were giving papers?

JONES: It was mostly Gordon and Bob, because they were the people who had the name. Many of the younger people were not as well recognized. I think Skip did some papers too.

BROCK: How was all the work getting coordinated? As a relatively small group, were there group meetings where everybody got together, or passed in the hallway? How did it work?

JONES: Andy was very organized. He had regular progress reports from every group that was formed, and I think those reports were prepared at least once a month. Andy went over each

one with the individual. I think they had regular staff meetings where Gordon and Bob attended.

BROCK: About how many people would go to that?

JONES: About six or seven.

BROCK: Did you have to help them to set those up or did they do those on their own?

JONES: Well, we only had one conference room.

BROCK: Okay.

JONES: If it was available that's where they met. Otherwise they would go into an office.

BROCK: Did that happen at a regular time or was it just as needed?

JONES: I don't really recall, but knowing Andy it was at a set time. Like ten to twelve on Monday morning.

BROCK: Okay. Was that organization something that he came in with right out of the gate?

JONES: Well, he certainly started it at the first opportunity.

BROCK: Okay. Maybe the last subject we could touch on this morning is the personal and working relationship that you saw between Gordon Moore and Robert Noyce, Gordon Moore and Andy Grove, and Andy Grove and Robert Noyce, if we triangulate those three men.

JONES: Right. Gordon and Bob had a very open relationship. Their offices, in the beginning were nearby and they felt perfectly free going back and forth.

BROCK: Okay.

JONES: Andy was much more structured, and they almost always went to his office.

BROCK: Gordon and Bob?

JONES: Gordon or Bob almost always went to Andy's office. He did not come to theirs. As far as their personal interactions went, Andy and Gordon were usually on the same plan. They understood one another much better. I'm not so sure about Bob and Andy. They were often confrontational.

BROCK: I've heard a couple people say that Andy Grove was deferential to Gordon?

JONES: Yes. He was the only one that Andy would be deferential to.

BROCK: What are your thoughts about that?

JONES: I know because Andy had a serious operation on his ears that enabled him to hear normally for the first time in many years. He said, "To really hear Gordon's voice was a treat."

BROCK: Wow.

JONES: I was just overwhelmed by that.

BROCK: He said that, at the time after his surgery?

JONES: I asked him, "How does it feel to be without hearing aids?" He said, "Wonderful." "Just to hear Gordon's voice for the first time, naturally, was a treat."

BROCK: Wow.

JONES: Yeah. He reveres Gordon, or he did. I don't know whether he still does or not, but I think he does.

BROCK: Do you think that was just born out of respect?

JONES: Respect and hero worship.

BROCK: Okay.

JONES: He felt that Gordon gave him an opportunity at Fairchild that few people would have given him. He appreciated it and he always will.

BROCK: Did you ever see any conflict between Gordon Moore and Robert Noyce? In what they were doing, it would be natural that people would have differences of opinions trying to figure this all out. Did you see any of that?

JONES: I don't think I saw any differences of opinion as far as Intel was concerned or Fairchild for that matter, but Gordon had some moral issues. One time Gordon, Betty, Bob and Ann Bowers were going someplace. This was before Bob and Ann were married. Gordon made a point of telling Bob—I head this from Ann Bowers—that he thought it would be best if Ann and Bob had separate rooms at the hotel. Bob said, "Okay, if Betty will feel better about it that's fine." Ann said, "It wasn't Betty. It was Gordon." [laughter] I never discussed it with Gordon. I have no idea what he really thought but I don't think he appreciated some of Bob's escapades with employees.

BROCK: That must have especially troubled him, because it jeopardized the workplace?

JONES: No. I don't think that was it. I think it was just old-school morality. But this was not something that we ever talked about.

BROCK: That's your impression?

JONES: Right.

BROCK: You mentioned that Andy Grove had some similar tendencies in that direction. Did you see that ever become an issue with Gordon?

JONES: No.

BROCK: Okay.

JONES: Andy definitely did have some lady friends.

BROCK: But you did not see Andy Grove give Bob Noyce the same sort of deference that he gave to Gordon?

JONES: Absolutely.

[END OF INTERVIEW]

INTERVIEWEE: **Jean C. Jones**

INTERVIEWER: **David C. Brock**

LOCATION: **Telephone Interview**

DATE: **15 June 2006 [Interview 3]**

BROCK: This is an oral history interview with Jean Jones, conducted by David Brock by telephone on 15 June 2006. Jean, in looking over the transcripts from our other conversations I realized that we did not discuss a challenging period for Intel which occurred in the early 1980s. It was challenging in terms of the rising competition in the memory business and also some turbulence in the microprocessor market. What were your impressions about that period and the general atmosphere at Intel in coping with these challenges?

JONES: I remember the period fairly well and there were tough decisions to make because Intel was always known as a silicon powerhouse, and the microprocessor was a deviation from that. It wasn't just a chip or a device. Decisions had to be made about the future. I don't remember Gordon struggling so much with it as much as Andy did.

BROCK: Could you tell me a little bit more about that?

JONES: That was around the time that we decided to go out of the memory business and to license AMD [Advanced Micro Devices, Inc.]. It was giving up a certain comfort level that we had. That was the struggle. I think we might even have had a layoff of people at that time.

BROCK: I think that's right.

JONES: That was always extremely distressing.

BROCK: Why do you think this decision to shift out of memories into microprocessors was more concerning to Andy Grove than to Gordon Moore?

JONES: Because that was Andy's job at that time. I don't remember whether he was president then.

BROCK: I think he may have been.

JONES: It was his job to lead the company along those lines, at that time. He was going to have to take full responsibility whether he was coerced or not. [laughter]

BROCK: For making the change?

JONES: Yes.

BROCK: I see. Why do you think it was less troubling to Gordon Moore?

JONES: Gordon had a policy of giving a person a job and letting them do it. It was not that he wasn't very concerned about the company, but he had absolute confidence in Andy's direction. I think the company was usually managed by majority control, majority conviction. Gordon was very confident of Andy's thoughts and his dedication to the company.

BROCK: Okay. Once it became clear to him that the change from memories to microprocessors was what had to be done, he was fully confident that Andy Grove could accomplish it?

JONES: That he could do it.

BROCK: Do you have any impression of how Bob Noyce reacted to both the economic challenges and that big-shift decision?

JONES: Bob was probably more of a visionary than either one of the other two, and he probably supported it. I don't remember any degree of discord.

BROCK: Okay. I know that also in this period IBM [International Business Machines Corporation] made a substantial investment in Intel.

JONES: Yes.

BROCK: What are your recollections about the importance that people in the company gave that development?

JONES: I think it was major as far as the development of the company was concerned, at that time. It gave us a wonderful place to put our products that would give them the acceptance that was required to be truly successful. I think both the management of IBM and the management of Intel were very compatible. I don't know that they were best of friends, but I do know that there was a genuine respect on the part of Intel for their counterparts at IBM. Jack [D.] Kuehler, who was president of IBM at that time, used to call quite frequently. I felt that there was a great common respect between Jack and Gordon and I know he always treated me very nicely. [laughter]

BROCK: Did he call for Gordon?

JONES: Yes, he called for Gordon, but if Gordon wasn't there he had no compunction about giving me the information that he wanted Gordon to have. That was not always the case. Some people would insist upon talking directly with Gordon. Jack understood that if I said Gordon wasn't available it was true, he really wasn't. [laughter]

BROCK: It was my impression that it fell to Gordon to be the primary person to manage the relationship between Intel and IBM. Is it correct that even before IBM was an investor in Intel, they were a very significant customer?

JONES: That's probably true. I was not aware of Gordon being the designated driver. [laughter] But that's very possible.

BROCK: Okay.

JONES: That might be because of Gordon's personality. I don't know of anyone who knew him that didn't respect him.

BROCK: Right. This major decision to go from memories to the microprocessor and handling the IBM relationship and investment, in some ways was at the midpoint of Gordon Moore's tenure as the CEO of Intel. I have a couple of questions to get a picture of how Gordon fulfilled that role as CEO. In this period from 1979 to 1987 could you characterize what a typical day would have been like for Gordon?

JONES: First of all, he was always there by eight o'clock. He was a very disciplined person. If something was on his calendar it had to take place. That's just the way it was. He didn't change things around at the drop of a hat. He had regular sessions set up, particularly with Andy. Most of the managers and directors reported to Andy. Andy, in turn, gave Gordon a progress report every week on each of the divisions. Then they had their staff meetings, executive staff meetings, and Gordon always attended those.

BROCK: Was Andy Grove his primary direct report?

JONES: Yes.

BROCK: In a typical day, were there a lot of people trying to get individual meetings with Gordon, or was it more the case of these regularly set meetings with Andy Grove and the executive staff?

JONES: People would frequently try to set up individual meetings with him. Particularly if there was a division manager from another site coming in, he would call to see if Gordon had five or ten minutes to spare. We usually found the time. Gordon was very willing to see anybody who needed to see him. While we usually found time, sometimes it was just a sandwich in the office at lunchtime. In his capacity of CEO he made trips to Washington. He represented the company to the politicians to some degree. He also met very frequently with the chief financial officer, because Gordon had a head for figures and how they related to one another. He was very astute in looking at the different financial statements. He could see a relationship where I would just see a bunch of numbers. [laughter] As I mentioned before he always proofread the annual report.

BROCK: Right. When he wasn't in face-to-face meetings what was he doing in his workspace? Was he frequently on the telephone? Was he reading? Was he writing?

JONES: Yes he was. [laughter] All of the above, but he did most of his own research at that time. It wasn't until later that he would get help with his research, when he found somebody he could trust. [laughter] He was very much a stickler for accuracy. If someone gave him information that wasn't completely accurate, Gordon would not ask them to do anything again. [laughter] He wouldn't say anything to them that I know of, but he would look elsewhere.

BROCK: I see.

JONES: He wrote several speeches and articles for magazines during that time.

BROCK: He would do the research and the writing himself?

JONES: Yes.

BROCK: I know that part of the job of being the CEO of an organization like Intel is making high-level strategic decisions. What's your impression of how he communicated the decisions that he made?

JONES: I know that one of the things that tilted him in support of the microprocessor was the research that he did at his home on uses for the microprocessor. I think he wrote a paper titled something like "Where are we going to use all these microprocessors?" or something similar to that. He went around his house and he found in his own four walls one hundred and twenty-four uses for the microprocessor, before it was really on the market. [laughter]

BROCK: Interesting.

JONES: But he understood the potential through the research that he did, and that might have been something that tilted him in that direction.

BROCK: I see. I was thinking that some CEOs, when they make a decision, might produce a written edict stating, "This is what we're doing" while other people might communicate their decisions by verbally telling another person. How did Gordon communicate to others what he wanted to happen?

JONES: I don't think he ever had any difficulty expressing himself. [laughter]

BROCK: Okay.

JONES: He did it in a very acceptable way. He was never threatening.

BROCK: But clear nevertheless?

JONES: Yes.

BROCK: You just mentioned the financial issues and how financial reporting was a particular area of his interest and concern—an area that he really took great responsibility for. Can you think of other areas that were particular to his interest and concern?

JONES: Well, I think he watched marketing very closely, but I think marketing and financial matters are closely related anyway.

BROCK: Yes.

JONES: He paid close attention to the different ad campaigns—how they were received in the polls. They're all interrelated. On the other hand, he was vitally interested in the research on the technology. He really enjoyed that aspect. I'm not sure if the others were his first love. It may be that he was very capable in those areas.

BROCK: Would you say that technology was his first love?

JONES: Oh, absolutely.

BROCK: It's my impression that he took a great interest in deciding when, where, and how to build new fabs.

JONES: Yes. He was also very interested in the construction of the buildings.

BROCK: Oh really?

JONES: Oh yeah. [laughter]

BROCK: Could you tell me more about that?

JONES: Gordon just likes to build things. [laughter] He was very concerned—I remember particularly with the first building on Bowers Avenue. It was the first building where Intel bought the land and constructed the building. The structural architects were Simpson and Strata, a company based in San Francisco. They were primarily good at building structures in earthquake-prone areas. For instance, in the Alaskan earthquake, one of them was flown up there by the government to assess the damage and to make suggestions for repairing it and for avoiding it in the future.

BROCK: Interesting.

JONES: Gordon went over those details frequently, and as a result, I think the building is still attractive. It looks the same as it did when it was built in 1971 when we moved in. It has withstood the test of time.

BROCK: When he was CEO, how much of his time was devoted to working with the Board of Directors and issues connected to the Board of Directors?

JONES: Most of the interaction with the Board of Directors, other than the meetings, was done by the corporate secretary. That was Roger Borovoy, in the early days, and later on Tom Dunlap. I don't know who the secretary is now.

BROCK: Was Tom Dunlap the legal counsel, as Roger Borovoy had been?

JONES: Yes. But they were also listed as corporate secretaries.

BROCK: I understand. Did you have much interaction with or exposure to the Board of Directors group as individuals or as a working unit? Was that part of your orbit?

JONES: My interaction with them was more in the early days. As the Board grew in size and the company became more successful that was handled by the legal department. They would call in occasionally to talk to Gordon and I facilitated that whenever possible.

BROCK: Do any of the board members stand out as particularly important or influential or difficult?

JONES: Yeah. [laughter] As a matter of fact.

BROCK: Could you tell me a little about that? [laughter]

JONES: I'll tell you about one particular incident and hope that you'll use your discretion.

BROCK: Okay.

JONES: I think the most influential member of the board—well there were three that I particularly admired: Arthur Rock, Dick [Richard] Hodgson, and Max Palevsky. They were the core group. There were a couple of others who came and went. Charles Smith resigned and then I think he died not too long after that. He was a reasonably young man at the time and had some terminal illness. Another one was Steinberg.

But the particular person that I was really annoyed with was Sandy [Sanford] Kaplan. He had had surgery on his head. He was bald and he had a cancer removed from the top of his head. He came in with this bandage on his head. My office was located right outside of the conference room where they had their board meetings, which were in Santa Clara [California]. He came out of the little ante room and said, "Jean, you have to change the bandage." I said, "What?" He said, "You have to change the bandage." I said, "Wait. I'll get the nurse. She can change the bandage." He said, "No. This is something you can do." Well, it was the most disgusting thing in the world.

BROCK: Oh my gosh.

JONES: And I've had four children. I know—[laughter] I don't like an old bald head. [laughter] So, I did that job.

BROCK: You mentioned that you had particular respect for those three board members. Let's talk a little bit about each of them in turn, and why you felt that respect for them. Arthur Rock, for example.

JONES: Mr. Rock was an absolute gentleman. He treated everyone with courtesy and respect, as far as I ever witnessed. One time he drove over something in the parking lot. He drove a valuable antique Porsche and he felt the tailpipe scrape. He was rather agitated and he said, "Call the AAA [American Automobile Association] and get them to transport this vehicle to the

garage in San Francisco." So I did. I arranged for it to go on a flatbed tow truck, which was fairly new at this time. Then I had to call his mechanic and alert him to the fact that this valuable machine was being towed in, then make arrangements for him to get a ride back home. He came out of the meeting and he had this list of things that I had to do. When I told him that I had taken care of it all he seemed so pleased and grateful and he sent me a little note the next day. He was very nice.

Then there was this guy Steinberg. Somehow or other he ripped his suit coat pocket, a beautiful suit, and he came out of the ante room and he said, "Jean, can you mend my suit?" [laughter] I said, "No. I really can't. I don't sew." He said, "Well, this is not a big job." I said, "Now, you promise not to ball me out?" [laughter] He said, "I promise." So, I mended the seam in his coat pocket. It was on the outside and I was very uncomfortable doing it because it was a beautifully tailored suit. He was a big man and I know he had to have his clothes tailor made. But that was part of the deal. [laughter]

BROCK: What was your impression of the relationship between Arthur Rock and Gordon Moore?

JONES: I think they are very good friends but not buddies.

BROCK: Right.

JONES: I think once again it's a case of mutual respect for them as individuals and as members of the business world.

BROCK: Okay.

JONES: I think Arthur Rock and Bob Noyce might have been a little closer.

BROCK: On a personal level?

JONES: Yes.

BROCK: Okay.

JONES: They were skiers and enjoyed that type of atmosphere, whereas Gordon didn't ski.

BROCK: What about Dick Hodgson?

JONES: Dick Hodgson was on the Fairchild Board of Directors. I think he and Gordon were good friends. I don't think they ever mingled on a social level, but they were good friends. They understood the business and I think Gordon and Bob respected Dick's business sense, along with Max Palevsky, but Max was more technical. I don't think Dick was.

BROCK: Do you have any other thoughts about Max Palevsky?

JONES: Personally, I really liked him. I took him to the airport several times in my old Nash Rambler. It had been my father's, who decided to give it up when it had about 10,000 miles on it. My father said that Susan, my daughter, could have it but she was only about thirteen at the time. I thought, "Well, I'll drive it to and from work. It's good for me." Max was a very wealthy man. He sold to Xerox [Xerox Corporation] and his home was displayed in *Architectural Digest*, and I was just a little intimidated. So we walked out, we got in the car and I drove him to the airport and he said, "What kind of gas mileage do you get on this car?" [laughter] "Another thing that came up at the board meeting was the fact that they wanted to paint the walls. Do you know that building is only two years old. It shouldn't need painting. What do you think about that?" I said, "Wait a minute. I have four children. I could paint my walls every year, so you can't go by my judgment." [laughter] He was very down-to-earth. He told me about various aspects of his life. He was very interesting. I liked the man. I do think he had a good sense of the business, where it was going, and I think he contributed to the board.

BROCK: Shifting gears—let's talk about when Gordon stopped being CEO and was acting as chairman of the Board of Directors. I believe he did that from 1987 to 1997? What are your thoughts about how Gordon played that role and the difference from when he was CEO?

JONES: There's a fine line, particularly because Gordon owned, at that time, about five percent of the company. If he said anything or if he wanted something done, it was going to happen. [laughter] I think he managed it diplomatically. I might have given you the impression that Gordon throws his weight around, but he never did. That was just my interpretation.

BROCK: Do you think he was sensitive to the fact that he was chairman but he was also co-founder, the former CEO, and one of the largest individual share owners? Do you think he was sensitive to how much sway he had?

JONES: I think he was very aware of it, but I don't think he ever flaunted it.

BROCK: Did his routine change when he became chairman and passed over the CEO title?

JONES: It probably did. He was still busy but he was probably busy doing other things. I think he became more of the outside man, as far as contact with the Washington scene and the financial world. He wrote more, and about that time his home life changed to some degree because his mother-in-law passed away so he could take more vacations and indulge himself a little bit.

BROCK: He started to travel for personal pleasure more frequently?

JONES: Yes, but not excessively so. He never missed a meeting or anything of that sort.

BROCK: Was it your impression that he still followed the technology and research closely?

JONES: Oh yes.

BROCK: How would he do that?

JONES: Probably through research magazines. Research journals and magazines like *Science*. [laughter] I'm sorry. I'm sitting outside and I have an old dog and everyday at this time the filter turns on the pool and everyday she runs out and she tries desperately to get to it. [laughter] You would think after twelve years she would have learned.

Now, we were talking about Gordon's time after he became chairman?

BROCK: Yes.

JONES: He still attended all of the executive staff meetings. He still met regularly with the research groups.

BROCK: Okay. Did he still continue to get their research updates and that type of reporting?

JONES: Yes, and all of their progress reports on a monthly basis.

BROCK: Okay. How do you think he responded to that increased public role and public exposure? Was that something that he welcomed or accepted? What was your impression about that?

JONES: Well, I think he would have avoided it if he could. [laughter] There was no way out and as a result he managed it extremely well. He worked for many years on several government committees, so he was familiar with an awful lot of the Washington folks and where they worked. The fact that he did not like it was incidental, but he managed and he did a great job. I don't know if you heard the comment that he made when he received a national award from President Bush [Medal of Freedom], and somebody asked him, "What was it like to get that award after getting the National Medal of Technology a few years earlier?" He said, "Well, it's the same room, same type of award, same seating, different Bush." [laughter] He was not overly impressed or intimidated.

BROCK: In our previous discussion we talked about some of the early employees and the early figures in the Intel story, and I realized that I didn't ask you about Dov Frohman. Could you share with me your impression about him and his continuing involvement with Intel over the years?

JONES: I think Dov was probably—how am I going to say this? First of all, he was a very gifted man, in many ways. He was gentle. He was soft-spoken and brilliant as far as technical issues went. He was also deeply devout. He was a rabbi. I admired him tremendously. He was a very nice man. Then he left Intel and went to teach in a college in Africa, and he taught for a couple of years. When there was an interest in starting a research center in Israel, he was recruited. Or maybe he came to Intel with that suggestion, I don't know. When it was in the mix it was generally considered that Dov would head it up. He did extremely well.

BROCK: It's my understanding that there continues to be, to this day, a very large Intel presence in Israel.

JONES: Yes. I don't know whether Dov is retired now.

BROCK: I believe he is.

JONES: I think I had heard something about that. To tell you the type of man he is: I told him that I wanted to take a tour of the Holy Land and Egypt, and he said, "Whenever you do it don't hesitate to call me. I will personally take you around."

BROCK: Did you end up doing that?

JONES: No, I didn't. My children wouldn't let me go.

BROCK: Oh, I see.

JONES: A tourist bus was blown up in Egypt at that time.

BROCK: Oh, I remember that.

JONES: They were just too concerned about it. I thought, "You know, I don't need to go. There are other places to see."

BROCK: Another person who achieved even greater prominence in the firm, who we didn't talk about was Craig Barrett. When did you first encounter Dr. Barrett?

JONES: When I first knew him I think he was in engineering working for Gerry Parker. Craig came from Stanford [Stanford University]

BROCK: Yes.

JONES: He was an associate professor at Stanford and he worked a year on sabbatical at Intel. Then he went back to Stanford and a couple of years later Andy or Gordon called him and asked if he knew of any Ph.D. candidates that he felt would work well for Intel in the mechanical engineering environment. He said, "Yeah, how about an associate professor?" [laughter] He left Stanford and came to Intel and after that it was like he was the golden child. He just rose up the ranks very quickly.

BROCK: What were your impressions of him as a person and in the changing roles he played at Intel?

JONES: First of all his personality was a bit different from—how can I say this nicely? I don't think I can. I'll just say it. Craig Barrett is a very cold person. He makes his decisions based on the information or the facts only. He doesn't take other things into consideration. That's my impression, but I've never worked for or with the man. I know that he had a lot of access to Gordon and we had a fairly friendly relationship. I don't ever remember being on his bad side, but there was a coldness about him that bothered me, and he was obsessed with bigger, faster, cheaper.

BROCK: In terms of manufacturing?

JONES: Yes.

BROCK: Okay. Was that focus on manufacturing a similar world view that he shared with Andy Grove? Was there a similar fascination?

JONES: I don't know. I think Andy looked at manufacturing as part of technology. Not the end-all or be-all. It was not the whole focus. I think Craig's focus might have been on the manufacturing and getting the product to market.

BROCK: Okay. How would you characterize Craig Barrett's working relationship with Andy Grove and with Gordon Moore?

JONES: I think Craig was more compatible with Andy. They had a better working relationship, perhaps because it lasted longer. I think Craig might have used Andy as a mentor. But Craig and Gordon certainly shared their fishing hobbies and the outdoors. Both of them were more outdoorsmen than Andy.

BROCK: I see.

JONES: Andy liked to ski but I think that was the limit of it. Do you know how Andy is doing? The last few times I've seen him he's been obviously ill.

BROCK: I don't have any real good information there. I only know from talking to—I know back in March I did a brief interview session with Craig Barrett and right after we were finished he was going to have dinner with Dr. Grove.

JONES: Oh good.

BROCK: I guess that tells you something.

JONES: When I read the annual report this year—I didn't go to the shareholder's meeting—I was saddened because I think it was the first annual report that Andy was not mentioned.

BROCK: Oh. I must admit I haven't read it.

JONES: Usually he wrote a letter to the shareholders and there would be references in the annual report. I was saddened by that. I ran into his wife at Sears. It was funny, we were both buying sewing machines for our granddaughters.

BROCK: Oh wow. [laughter]

JONES: She said, "I learned to sew when I was fourteen, with my sewing machine, and my granddaughter's turning fourteen." I said, "So is mine. And I thought it was time she learned to sew." [laughter] Not that I could sew but it was time she learned to sew. But Eva [Grove] went on to say how much she learned from making her own clothing. It gives you an understanding of their down-home values.

BROCK: Right. Are there any other thoughts that you might have about Craig Barrett?

JONES: No, I really don't have any more.

BROCK: Okay.

JONES: On a personal basis I probably liked the man. He has a good sense of humor but I don't like some of the policies that he instituted, and I think he changed some of the focus in the company from technological excellence to a cheaper, better, faster matrix.

BROCK: The next topic I wanted to ask you about was the Intel culture. It seems to me that Intel is a very interesting case because not only does it appear to have a very distinct organizational culture, but there is an explicit recognition of Intel culture and different activities aimed toward maintaining that culture and communicating it to new people. I'm wondering about your reflections on how that evolved and how important that was?

JONES: I think it evolved really from the very beginning—I think it was Andy who said—we were doing a great deal of hiring. People were coming from all over the country. They were coming from different working environments and he wanted them to learn how things were done at Intel and not the way they used to do them. That was probably the seed that started it all. It worked marvelously well, I think. I know of people, my daughter for instance, she worked at Intel when she was going to college. She had a part-time job and then she joined the finance department after she graduated. To this day, she said that many of the lessons she learned at Intel, the discipline—the sign-in sheet if you were late—are still with her and she used that early training to her benefit.

BROCK: I see. If it was Andy Grove responding to that real expansion issue that led to the formalization of what the Intel culture meant and these different ways to bring people into it, I'm wondering about what you see as the key aspects of that culture? Which parts of that culture came from Gordon's approach to the world, or Bob Noyce's, or Andy Grove's? What were the origins of the key features?

JONES: Another part of the Intel culture was the community involvement. I think that was probably a combination of all three. They all supported different aspects within the community. For instance, Andy was very involved and still probably is with Second Harvest Food Bank. Of course, Gordon was always involved in the ecology and recycling movements. Bob with his religious background I'm sure would have supported—no, I don't know about that—I was going to say, "Supported the efforts for the homeless," but I'm not so sure. [laughter] He was a very hardworking man himself and I think he expected everybody else to work hard too. I'm not sure he was very tolerant of some people's shortcomings. A very large part of the culture at Intel was education. I don't think there is a single employee who has not been offered the opportunity to become more educated about his job or a job he or she might want to pursue.

BROCK: Okay. Where do you think that comes from?

JONES: I'm almost positive that came from Andy, but I've never heard him speak of it. It just sounds like him, because he—through all the years—I think he continued to teach some courses at UC Berkeley [University of California, Berkeley] and it was still part of him.

BROCK: What about the aspects of Intel culture as an egalitarian, analytical, numbers-based, management-by-numbers, and real performance-based evaluation of people?

JONES: I think a part of that was embodied in the business update meetings. They are quarterly meetings held by divisions and you talk about numbers, comparisons, charts, percentages. That's all they are.

BROCK: Where do you think that comes from?

JONES: I think that's part of the culture. It's a constant monitoring of Andy's, "Only the paranoid survive." [laughter] That type of scenario.

BROCK: Which pieces of the Intel culture do you most associate with Gordon Moore?

JONES: I think training people to do their jobs well, plus giving them the best tools to do that job. I think the education would come under that category. I would say the, "you don't abandon an employee once you hire them" belief.

BROCK: Okay. You associate that with him?

JONES: Yes. When I was working for him I instituted a Buddy Program for administrative employees when they were hired. There would be a group of more senior employees who would—it was a one-on-one thing. They would take them under their wing and get them established in their job, and if they needed help with anything they had a person to call. Gordon supported that completely.

BROCK: Okay. I have a series of probably unfair questions, but if you don't mind I'll just try them out and we can see where they lead? If you had to describe Gordon Moore in just one paragraph how would you try to answer that challenge?

JONES: He's a complex man and when he was starting—I'm not going to do the paragraph right now.

BROCK: Okay. [laughter]

JONES: When he and Bob were thinking about leaving Fairchild to form a company, he called me and asked me—the way he put it was, "Could you come and help us get started?" He didn't say, "I'm offering you a job. It'll cost so much or you'll get paid this, that, or the next thing." We did not even discuss salary until after I accepted it. He said, "What kind of salary would you expect?" I said, "Gordon, I haven't worked in six years. I don't really have any feel for that." He said, "I'll take care of it." I had absolute confidence that he would. My point is that I think he treated people as equals with courtesy and respect. When the unions were trying to organize the electronic companies here—I have always been very much against unions since I worked in a company in Human Resources. They went on strike and it was a bitter experience for me and I had very little respect for unions at that time. Maybe they have changed. I was not interested in any of their recruiting efforts. I said to Gordon, "How do you feel about this union recruitment?" They were handing out leaflets in the parking lot and he said, "I don't think we need to be unionized. I think our working conditions are fair. Furthermore I would feel absolutely awful if an employee felt he had to go to a union representative to complain about something here at the company. Why couldn't he come to me and talk to me about it?" I thought, "Well now that says a lot about him."

BROCK: Which people did, right?

JONES: [laughter] Yes they did.

BROCK: While reflecting back on what you were just saying, it seems like there's something about trust or trustworthiness?

JONES: Right. Authority, credibility.

BROCK: That seems to cut across a lot of what you were saying, from various people and organizations' different relationships to Gordon all were shaped by this element of trust and trustworthiness.

JONES: And responsibility.

BROCK: And responsibility. If there was one thing that you in particular know about Gordon Moore or have experienced of him that's really important to understanding him what would that be?

JONES: That's kind of tough.

BROCK: Yeah. Or, is there a story that, for you, really captures him?

JONES: I think he's a very human person. He's not perfect, probably, but as far as my working relationship with him, I never saw him really—he didn't come in some mornings in a bad mood. He was very much the same everyday, and more optimistic than pessimistic.

BROCK: Interesting.

JONES: My own personality is similar to that. I'm kind of upbeat, and I don't look for trouble. [laughter] I think that's probably why I worked as long as I did, because it wasn't a chore to come to work. I didn't have to worry about what kind of mood he was going to be in. If I goofed and did something wrong I didn't have any problem telling him about it. I didn't like to do it but I did it, and he accepted it. [laughter]

BROCK: Okay. What is it that you're most proud of from your long association with Intel?

JONES: The museum has to be my particular pride of contribution. When I retired many of my coworkers wrote and told me how much they appreciated the help that I had given them, that I had acted as a mentor to many, unbeknownst to me, and they said many nice things that I don't think they needed to say, unless they meant them.

BROCK: Right. [laughter]

JONES: There was nothing to be gained. After I left Intel I was gone about five years. I was invited to speak before the administrative groups that were brought in from all over the country and there were several hundred of them there. I told them about the early days of starting Intel and how thin the administrative ranks were for the first year and a half, mainly me. [laughter] They got a kick out of it and they said such nice things and asked such sensible questions that I felt I had done some good.

BROCK: Great.

JONES: I enjoyed working there. I never badmouthed the company. [laughter] And for good reason, I didn't have anything to complain about.

BROCK: Is there anything else that occurs to you as something that we have not touched on that we should have, a question that I should have asked you that I haven't?

JONES: I can't think of anything. The main thing is in dealing with Gordon was his reliability. You could count on him being there at eight o'clock in the morning. You could count on him attending his meetings and being prepared. By the same token, it didn't matter what kind of sandwich I fixed for myself for lunch, he was very happy to share. [laughter] I would go down to the cafeteria and they had a make-your-own sandwich bar and I would make it and bring it up and I would get to my desk and he would say, "That looks kind of good." I said, "You want half?" [laughter] He'd eat half the sandwich. But it didn't matter what it was. He wouldn't say, "What is it?" like a lot of people would.

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