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# Samuel F. "Ted" Dabney

Transcript of an interview
conducted by

Christopher Weaver

at

Clear Lake, California, USA

on

15 March 2018

with subsequent additions and corrections

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## Abstract

Samuel F. "Ted" Dabney begins with his early days as an engineer at Ampex leading to his first encounter with Nolan Bushnell, the co-founding of Syzygy, and eventually the video game company Atari. Dabney's narrative describes the creative and technical processes behind engineering the video games *Computer Space* and *Pong* in addition to the early days of manufacturing video arcade machines. Dabney presents his viewpoint of his personal relationship with Nolan Bushnell and the internal struggles at Atari leading to his departure. Also discussed are his contributions to Bushnell's Pizza Time Theater restaurant chain, his subsequent venture at Meadow Games, and his life prior to joining Ampex.

## About the Interviewer

Christopher Weaver is a Distinguished Research Scholar at the Smithsonian's Lemelson Center for the Study of Invention and Innovation, Distinguished Professor of Computational Media at Wesleyan University and Director of Interactive Simulation for MIT's AIM Photonics Academy. He has contributed to over twenty-five books and publications and holds patents in telecommunications, software methods, device security, and 3D graphics. The former Director of Technology Forecasting for ABC and Chief Engineer to the Subcommittee on Communications for the US Congress, he also founded the video game company Bethesda Softworks. Weaver is co-director of the Videogame Pioneers Initiative at the National Museum of American History, recording oral histories and developing new applications for interactive media and public education.

## About the Editor

Justin S. Barber provided transcript audit-editing, emendations, and supplementary footnotes to this oral history as part of his broader work into video game history and digital museology.

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Interviewer: Christopher Weaver

Date: 15 March 2018

Location: Clear Lake, California, USA

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Weaver: Good morning, we're here with Samuel F. "Ted" Dabney. Today is March 15, 2018. Mr. Dabney. We're in Clear Lake, California, aren't we?

Dabney: Yes. We are.

Weaver: Very good. I'd like to start, if you don't mind today, with your working at Ampex?[1] And I'd like to ask you, when did you start at Ampex and what projects did you work on before Kurt Wallace tasked you to join the Video File division?

Dabney: It started after I got out of the Marine Corps. I wanted to get a job in electronics since I had studied that, but I didn't know enough about electronics. I knew a bunch of terminology that I had learned from Collins Electronics out of San Diego.[2] The terminology got me a job at Bank of America's research lab. I worked there for about a year but couldn't make any money. I couldn't do anything worthwhile, and Bank of America was not a good place to work.

So anyway, a friend of mine had gone to work for Hewlett-Packard. I called him, and he says "Oh yeah, come on in." so I went down to Hewlett-Packard. Fortunately, I had gone to some other company first and taken a test. The test was on RC oscillators that were invented by Hewlett-Packard, but the test wasn't at Hewlett-Packard.[3] When I went over to Hewlett-Packard, they gave me the same test! I aced it! I got the job at Hewlett-Packard. I was there about six weeks, and the guy that I had called, John Herbert, had gone to work for Ampex. He called me and asked me to go to work for him next. After six weeks, I went over

[1] Ampex, an electronics company founded in 1944, was a leader in audio tape technology and developed many of the analog recording formats for both music and movies that remained in use into the 1990s.
[2] The Collins Radio Company was founded in Cedar Rapids, Iowa, in 1933. The company produced shortwave radios, equipment for AM broadcasts, and communications equipment for the U.S. military and other specialized uses.
[3] An electronic oscillator is an electronic circuit that produces a periodic, oscillating electronic signal, often a sine wave or a square wave.

to work for Ampex. I told the guys at Hewlett-Packard, I said, "They're going to hire me as an engineer. It's going to take them at least three months to find out I'm not an engineer! That's three months experience that I can get. I gotta go!" The guy at Hewlett-Packard said, "Yeah, if it doesn't work, give me a call back. We have a place for you that we'll put you."

I went over to the Ampex Military Products division. We worked for DoD [US Department of Defense] and built very high-end recording devices. Really high end. It was all vacuum tubes by the way. I designed all the power supplies, amplifiers, and everything in vacuum tubes. That worked out pretty good. I was working for Kurt Wallace, who asked me if I knew Ohm's Law.[4] I said I thought I did. He said, "I don't think you do, but we'll hire you anyway."

After about six years, Kurt asked me to join him at Video File. It was in Sunnyvale, and that worked out pretty good. Nice office. Everything was fine. After a couple of years, this other guy came in and shared my office with me. Turns out this was Nolan Bushnell. Nolan liked to play games, chess and Go.[5] He wanted me to learn how to play Go, so I learned how to play, and we played Go. We talked a lot. He had all these great ideas. All wonderful ideas. His main idea was a pizza parlor that had a lot of video games. Not video games, video games didn't exist at the time, but pinball machines and pool tables. Things like that with talking barrels and singing things and such. That's what he wanted to do. We started going around looking at all these different places and what we could do.

All of a sudden, somewhere, somebody over at the Stanford Research Laboratory had invited him over, and he saw the video game called, not *Star Wars*, but some kind of video game like that.[6] He thought that was great. He said "Oh no, that's what we've gotta do. We've gotta do that instead." We looked at that and looked into computers that were around. There were PDP-8s and stuff like that. We decided to form a company; we called it Syzygy. Larry Bryan, Nolan Bushnell, and myself were sitting around my house, and we said okay, let's all put in $100 and get it started. Well, we all put $100 except Larry Bryan. He didn't have $100. We started working on it.

Well, it turns out Larry was a programmer, but he could not get any time on a machine to do any programming. Nothing was happening. We couldn't do anything. Then we started doing some numbers, looking at what it was going to take, looking at the speed of the computer and that kind of thing. We finally concluded that there was no way we could do what we wanted to do. We just kind of let it go.

[4] Ohm's Law deals with the relationship between voltage and current in an ideal conductor.
[5] The name Atari is derived from a term which describes a state of "check" in the traditional Japanese chess game of Go.
[6] The actual game being referred to is *Spacewar!*, first coded on the PDP-1 at MIT.

Finally, Nolan came to me and says, "Hey. You know how a TV set adjusts the vertical hold? You can make your picture go up; you can make your picture go down." I said, "Yeah." He asked, "Why is that?" I explained it to him. He said, "Can we do that?" I said, "I can do it intentionally. I can do it in analog." He says, "Okay." I went home; I moved my daughter out of her bedroom and started working on this thing. I bought a TV set, and sure enough, I got it to work. I got it to actually work like it was supposed to work.

I shared it with Nolan, and he thought that was the greatest thing in the world. He went off and sold his whole idea to Nutting Associates, a local arcade game company.[7] He got a great deal with them, and they hired Nolan on as Chief Engineer. Eventually, I came over there because we had to do a bunch of other stuff. He used that circuit that I designed to actually create the game *Computer Space* for Nutting Associates. I think he had Steve Bristow helping him but I'm not really sure about that.[8] That went pretty well.

The really important thing was that Nolan and I retained ownership of the game even though we were employees of Nutting Associates. Bill Nutting didn't own the game. We did. It brought a lawsuit later on, but we were actually getting royalties on the *Computer Space* game. We were getting that plus our salaries, so we were doing okay.

Several years later, Nutting Associates said, "Well, you were employees, so obviously that whole thing belongs to him." We went to court and somehow Nutting got the idea that I would support him in court. Nolan, in turn, wrote this outrageously ugly deposition about me. What a bad guy I was and a lousy engineer, not capable of doing anything. He wrote that. After the trial was over and the judge threw it out, Nolan and I were getting along okay. I asked him "What about this deposition you wrote about me?" He says, "Oh well, you know I didn't mean it." I said, "Give me $35,000 and I'll forget it." So, he did. [Laughs.] That was kind of the end of that.

We decided we really wanted to do our own game company. Nolan got a hold of the Bally Corporation in Chicago and said, "We'd like to do a game for you." They said, "No, not as long as you associate with Nutting." Nolan and I figured by this time, since we were making royalties off the *Computer Space* game, plus we were getting our salary, we could just go open our own store. We went over to Santa Clara to Scott Street, and opened our own store.[9] Nolan got a hold of Bally again, and we got a contract. It was for $24,000. Four thousand a month for six months. Nolan said, "We're going to give them a video driving game and a double-decker pinball machine." That was the contract. Now we have money coming in from Bally, so Nolan went and hired Al Alcorn at $1,000 a month.

[7] Nutting Associates was founded by Bill Nutting in 1966 as an arcade game manufacturer.
[8] Steve Bristow was an early employee and developer at Atari, creating popular video games such as *Tank* and *Breakout*.
[9] Reference to Scott Boulevard in Santa Clara, California.

He put him on the *Pong* game and put me on the pinball machine. I didn't want to work on pinball machines, but that's what I had to do.

That went on for a while, and we finally got some machines built. We decided to build 12 games. We just scraped just enough money together to build 12 games. These were *Pong* games, by the way. We sent one off to Bally, we put one in the shop, and put 10 of them out in different locations. Man, all of a sudden, we're making so much money, it was unbelievable! At that time, Nolan and I weren't taking a salary. We were just living off the money we get from pinball machines, pool tables, and things like that. But now we had these *Pongs* and, man, we had a lot of money coming in.

We kept going to Bally, trying to get them to accept the machine. They kept not accepting it, and that was really hurting us. What could we do? Al, Nolan, and I are sitting around the office and we can't afford to go into manufacturing. The cost of cabinets, the cost of TV sets, the cost of PC boards, cost of all of that: we can't afford it. I said, "Well, wait a minute, it's gonna be one of the two things. Either we're gonna go home, or we're gonna go into manufacturing. I, for one, don't wanna go home." Nolan and Allan said, "We can't do it, it's going to cost too much money." I said, "Let's make the decision that we want to make, and then we will figure out how to do it." So, we did. We said "Okay, we're going to go into manufacturing." [Laughs.]

And we did. Al Alcorn was able to whiffle up enough parts for the ICs [integrated circuits] and Nolan was able to get some guy with a PC [printed circuit] board company to build PC boards. I found a guy in San Francisco who sold Hitachi monitors. I had enough cash in the bank, so I could actually buy the monitors. I figured that was okay. I called up P. S. Hurlbut, a cabinet manufacturer. They were the ones who manufactured the cabinets for Nutting Associates. I called up Frank over at P.S. Hurlbut and said, "I need fifty of those cabinets." I had given him a drawing earlier. I told him, "I don't know if I'm ever going to be able to pay you." He says, "You can pick them up in two weeks." [Laughs.] I said, "I don't have a truck." He said, "I'll deliver." That was the whole conversation. We had fifty cabinets even though I told Frank I didn't know if I could ever pay him.

We had fifty cabinets and we were building the games. Al Alcorn's building the PC boards, I'm putting all the CB [circuit board] sets together, and Nolan's standing up there at the front of the place. I walked up to him and I said, "What the hell are you doing?" "What do you mean?" "You gotta go sell these things!" Oh man, he turned white. He said, "Oh man, I gotta sell'em!" He came back later, and he had the sheepiest look on his face. I said "Well, how'd it go?" He said, "I need three hundred." Three phone calls and he sold three hundred machines! Sight unseen! [Laughs.] That was crazy! Oh man!

All of a sudden, now we had to have more but we needed more square feet to build all these machines. All we had was 1,700 square feet. As it turns out, it just so happens that the guy in the office next to us had moved out in the middle of

the night because he didn't want to pay his rent or something like that. I took a saber saw, cut a hole into his office, took over his office. Now we had 2 x 1,700 square feet and started building more *Pong* games. That was a fun time.

Weaver: Hold on for one minute. I want to bring you back to Ampex. I'm going to ask you smaller questions, so that it gives you a chance to think about it, and then I'll lead you into the next thing, so you don't feel that you have to tell the entire story in one swoop. Ted, do you remember your first meeting with Nolan Bushnell and what your impression of him was?

Dabney: He was just some tall guy who was taking over one of the desks in my office. I don't remember anything about him coming in but, you know, there he was. That was my first impression. As I got to know him, I asked him what he was doing and what he was responsible for. He didn't seem to know. [Laughs.] That's all I can say. But he liked to play games. He liked to play chess, so we played some chess. He was learning a new game called Go and wanted me to learn that with him. That was about it. That were my first impressions of him. I never did figure out [what] he did while he was at early Ampex.

Weaver: So, you didn't collaborate on any project?

Dabney: We talked about him having a pizza parlor with talking barrels and things like that. I don't know. He just had some weird ideas.

Weaver: But nothing at Ampex?

Dabney: Yeah, it was at Ampex Video File.

Weaver: No, what I meant was a collaboration at the Ampex business.

Dabney: Oh no. We had nothing to do with each other as far as the Ampex businesses were concerned. I don't know what he did, but I was an electronic design engineer. I designed circuits, and I don't know what he did.

Weaver: So, how did the idea of a video game first come up?

Dabney: Well, Nolan had seen the thing over at Stanford.

Weaver: Is this the Artificial Intelligence Laboratory?

Dabney: Yeah. Exactly. He saw that and that's where he got all excited about video games. We started looking at that and all kinds of iterations on it. He finally concluded that there was no way you could do it economically. He couldn't make any money on it because you have to have a computer that can run five, six, seven, eight different monitors. Only [mainframe] computers were capable of doing that.

Weaver: Do you remember when it was that you and Nolan went over to the Stanford Artificial Intelligence Laboratory [SAIL]?

Dabney: Nolan had gone over by himself and then he took me over there. I didn't understand what I was looking at. I had no idea. They show this stuff on the screen, shooting each other and all this kind of stuff. Big deal. [Laughs.] It didn't really interest me all that much, but Nolan got all excited about it.

Weaver: Do you remember that the name of the game was *Spacewar!*?

Dabney: I don't remember that it was but that probably is what it was.

Weaver: And these were on ... were they DEC computers, PDP computers?

Dabney: They were big computers. I don't know what the brand of them. I didn't know anything about computers at that time. They were big, I know that.

Weaver: Did you ever meet a fellow over there named Jim Stein?[10]

Dabney: Not that I remember.

Weaver: Okay. Do you remember meeting anybody else at SAIL when you were there?

Dabney: No. I mean, I did meet people. I went there with Nolan. He introduced me to some people, but I don't remember who.

Weaver: Did Nolan mention before SAIL that he had ever seen this game before?

Dabney: Yeah, he had seen it at SAIL before and that's why he wanted me to go over with him.

Weaver: Right, but the first time, as far as you know, he saw the game was at Stanford Artificial Intelligence Laboratory?

Dabney: Yes. Yes. Yes. As far as I know unless they had something like that at Utah. I don't know.

Weaver: Do you know whether or not you or Nolan ever got a copy of the printout of the computer game that was running on those machines?

Dabney: No. Definitely not.

[10] According to Nolan Bushnell, Jim Stein was a friend who worked at SAIL. Bushnell has stated he was able to convince Stein to install *Spacewar!* on a computer at Stanford, having seen and played the game years before at the University of Utah.

Weaver: How did you come to discuss forming a partnership with Nolan and Larry Bryan.

Dabney: Well, we were just sitting around my house one time, we were just talking about it. And all seemed like a good idea. We thought we could get a PDP-8 or something, one of these computers, and Larry Bryan was a programmer. We decided well, let's just give it a try. We will get a computer, and Larry will write some code, and we'll come up with things. Larry had a dictionary and found the word "syzygy."[11] He liked that word, so we named the company Syzygy. And the idea was we'd all put in $100 and go ahead and get started. And Nolan and I put in $100. Larry never did. Larry couldn't get any time on a computer, so he couldn't write any software. That's just kind of the way it went. It stayed like that for months and nothing happened.

Weaver: Well, what was Syzygy supposed to do? In other words, you formed the partnership, what was the grand idea?

Dabney: The grand idea was to get one of these PDP-11s [Programmed Data Processor], PDP-8s, or some other computer and interconnect it to about seven or eight TV monitors running video games.[12] That was the whole idea of it. But once we sat down and tried to do some financial evaluation of the whole thing, it was difficult. The processing computer. How fast it was. How many TV sets you have got to actually drive. You just couldn't get there from here. No way. There was no way you could make any money with this thing at all. So, it just kind of died and that was kind of the end of it.

Weaver: Did you actually build anything during this initial period, or did you just draw schematics?

Dabney: We didn't even draw schematics. There was nothing to do until we had some software. The plan was Larry would write some software, we would get a computer, I would get some TV sets, which we start hooking up to see how all this works. But like I said, we just did the mental exercise and realized it wouldn't work anyway. We just never even got to that point.

Weaver: Was there ever a thought of using specialized circuitry to recreate certain *Spacewar!* functions while still primarily running on a computer?

Dabney: I'm not sure I even understand your question.

Weaver: I'm asking if there was there a discussion when you figured out that you couldn't do it on just a Nova computer. That you started thinking about alternative ways to try and accomplish the same thing, but not doing it just through the computer?

[11] A syzygy is a conjunction or opposition, often used to describe astronomic events.
[12] The interviewer later noted that he believes Dabney was referring to the PDP-1, not the PDP-11, which would not be released until 1972, a year after *Computer Space* was created.

Dabney: Not at that time, no. We figured we had to have a computer and a computer wasn't going to work. And it wasn't until months later. Nolan asked me about the vertical hold on a TV set. That's what changed the whole world with him just asking me that question because I was able to create that kind of thing digitally. And once I did that, once I had that circuitry working, man, it was off to the races.

Weaver: Did Syzygy exist when you began to build your prototype hardware?

Dabney: Yes. Yes. Yes.

Weaver: And how did you and Nolan divide the work on building that first prototype?

Dabney: He had the ideas, and I did the work. He was very good with ideas. He had damn good ideas. [Laughs.]

Weaver: And did you ever join Nutting Associates?

Dabney: Yes, I did. Nolan had gone over to Nutting and was [their] chief engineer, but he was getting to a point where he's going to need a cabinet. He needed somebody to build a cabinet for him. That's when he brought me over, and so I started working there at night building cabinets but then he kept doing more and more. He needed me more and more, so I quit Ampex and went over to work for Nutting also.

Weaver: And was it the time when you left that you were thinking of building *Pong* or building *Computer Space*?

Dabney: *Computer Space*. *Pong* wasn't even an idea right then.

Weaver: Was there anybody at Nutting Associates, another programmer, to help build *Computer Space*?

Dabney: I don't know for sure, but I think Nolan had Steve Bristow helping him.[13] I don't know that. I heard a rumor to that [effect] later on. I know Nolan was pretty smart, but he wasn't a very good technician. I kind of figured he had to have some help doing that. But I don't know that. I just heard that later.

Weaver: Do you remember someone at Nutting by the name of Gerald Gleason?

Dabney: Not off the top of my head, no, no. But he could have been there.

Weaver: How did you decide on the control scheme for the game? In other words, who designed the controls?

[13] Steve Bristow would later go on to work at Atari as Vice President of Engineering.

Dabney: Al Alcorn. Al Alcorn designed the game. We talking about *Pong*?

Weaver: No, I'm talking about-

Dabney: *Computer Space*?

Weaver: Yes. *Computer Space*.

Dabney: Oh, that was collaboration between Nolan and myself. Mainly it was me: the control panel, the coin switch and all that stuff. I had to do all that.

Weaver: Was there a joystick-like device that you used on certain prototypes?

Dabney: There was a joystick, but it didn't work because of the torque, it would break. So, we just used knobs.

Weaver: Who came up with the idea of using the joystick initially?

Dabney: It was just kind of one of those good ideas. I just designed a joystick, but the torque was too much, and it would just break. It wasn't any good.

Weaver: Do you remember what the relationship was between Syzygy and Nutting Associates?

Dabney: We just put Syzygy Engineering on the control panel of *Computer Space*. Our royalty checks came to Syzygy. Our salaries came to us.

Weaver: So, did Syzygy continue to exist while you and Nolan were Nutting employees?

Dabney: Oh yes. But it didn't for Larry Bryan because Larry Bryan never put in his $100.

Weaver: And Larry Bryan was one of the original three?

Dabney: Yes.

Weaver: You mentioned that I believe Syzygy maintains the ownership of the game. Would you talk about that at little bit?

Dabney: Yes. Ah, that was maybe all Nolan's negotiation with Nutting. I really didn't know much about it and didn't much care about it. The agreement between Nutting and Nolan was that we would own the game. We would get a royalty and we would get our salary. But that was negotiated between Nolan and Bill Nutting. They managed it all out.

Weaver: Is there anything else about Nutting that you think is important in terms of the relationship, what you developed, etc.?

Dabney: Well, yeah. There was, because with the success of *Computer Space*. Bill Nutting wasn't the smartest guy in the world. He had his salesmen. He started looking at how much money his salesmen were making and decided, "Well I don't need these salesmen. I'll just sell them myself" and he fired them. All I said was the salesman should be the highest paid guy in your company and really should be if you're [going to be] successful. Bill Nutting didn't look at it that way. Anyway, Nolan tried to negotiate some kind of deal with him to get some ownership in Nutting Associates to work out some kind of continuous thing. That never worked.

Weaver: Do you remember the name of the salesman who he fired?

Dabney: Yes. Ralstin. What was his first name?

Weaver: Was that David Ralstin?

Dabney: Yeah, David Ralstin.

Weaver: And did you have something that you utilized David Ralstin for later?

Dabney: Yeah, that was great. Because once he got canned, he had a bunch of pinball machines and pool table and a few other things. Nolan and I bought them from him. That was what we basically lived on. The money we got from these pinball machines.

Weaver: How did you and Nolan come up with the idea for Atari and how did you divide your responsibilities at Atari?

Dabney: Well, once we had some success with *Computer Space*, the idea was, "Where do we go from here?" Well, Nolan decided he's going to go out and find more work to do. He went to Chicago and went to Bally Corporation. He tried to talk to them and get support for a video game. But they said, "No." They wouldn't talk to us as long as we were associated with Nutting Associates. By this time Nolan and I were making some money off the pinball machines. We were making some money off our salary. We're making some money off royalties, so we felt, okay, let's go start our own business. So, we did. We started our own business and we still called it Syzygy. Nolan went back to Bally and we wound up getting a contract. We weren't associated with Nutting anymore.

Weaver: Yes, I want to show you something, okay? I want to show you something that we have in the archive. You say that Nolan got a contract, and I want to see if you recognize it, okay? [Weaver shows Dabney a document on Syzygy letterhead.[14]]

Dabney: Mm-hmm [affirmative].

[14] See Appendix I for the document in question.

Weaver: What was the date?

Dabney: 1972.

Weaver: July 10, 1972. To a fellow named John Britz. Look at it. It clearly looks like a contract, doesn't it?

Dabney: Yeah.

Weaver: You can read what's here.

Dabney: Yeah.

Weaver: Go ahead.

Dabney: "I was pleased to receive the contract and check and would like to thank you for your vote of confidence in my skill as amusement engineer."

Weaver: Okay and then you see that it has a delivery date. Would you just read this for a minute?

Dabney: "Delivery date for the flipper mockup in September 1972. All video games will be finished November 15th."

Weaver: Right. And now let's talk for just a minute about the flipper game. I think it indicates it's a four-player flipper game called *Fireball*?

Dabney: It wasn't called *Fireball*.

Weaver: Okay, although that's in the letter.

Dabney: Yeah, could be. I don't know.

Weaver: Yes, and here's the second part that goes into the specific parts which he needs and then he talks about the video game. Would you read that?

Dabney: Okay. The video game has a hockey theme, which has a great amount... features are...scoring...[15] Yeah that wasn't the original thing. It wasn't because I know Nolan said he wanted a driving game. In fact, we got into a big argument about the damn driving game.

Weaver: Fine, so I just wanted to show this to you. ... So, Ted, I didn't mean to interrupt you.

[15] The original document text reads: "The video game has a hockey theme which has a great amount of two player speed and excitement. The features are: on screen digital goals, field multidirectional hockey players with sticks, goal tender, puck with computer-controlled motion to simulate actual ice characteristics." See Appendix 1.

Dabney: Oh no, that's fine.

Weaver: You started about a contract that Nolan was able to get with Atari.

Dabney: No, no.

Weaver: Oh, I'm sorry; with Bally.

Dabney: Bally, yes. Now I never saw that contract. I had nothing to do with that. Nolan did all that. He just told me about it and told me what I had to do. That's what I did.

Weaver: Okay. In general, did you offer business advice to Nolan when he wanted to do things?

Dabney: Yes.

Weaver: Did he generally follow your business advice?

Dabney: When he did, it worked. When he didn't, it didn't work. [Laughs.]

Weaver: Okay.

Dabney: That's a fact. [Laughs.]

Weaver: And I'm going to ask you about that in just a little while to give us some examples. You worked on the pinball game for Atari. Is that correct?

Dabney: Yes.

Weaver: And what kind of a pinball game was that?

Dabney: It was supposed to be a two-layer pinball machine. One with a smaller field on top and a regular pinball machine field on the bottom. My job was trying to come up with ways of getting the ball to go from the top to the bottom. If you had to get it from the bottom to the top, it was a little tricky. And I wasn't very good at this. In the meantime, I'm channeling all the parts and stuff that Al Alcorn needs for building *Pongs*. I'm working with the cabinets and doing all this kind of stuff as well as trying to work on the pinball machine. I didn't do a very good job of the pinball machine at all.

Weaver: The pinball machine as you said was multi-level.

Dabney: Yeah.

Weaver: Is that very common at the time?

Dabney: No. No, it had never been done before.

Weaver: Who came up with that?

Dabney: Nolan. Nolan's brilliant idea. He had brilliant ideas.

Weaver: But you ended up doing the work.

Dabney: Well, yeah. That's what I do. [Laughs.]

Weaver: You mentioned "at the same as the time the pinball machine", you were helping Al Alcorn, who I believe was the engineer hired by Atari?

Dabney: Yes.

Weaver: Do you happen to remember what number employee he was?

Dabney: I think he was number three. Cynthia Villanueva was number one.

Weaver: And who was Cynthia Villanueva?

Dabney: She was a receptionist. She was number one, and then, I think, my brother came in. He worked there for a while. I think he was number two. But he may have come in after Al Alcorn. Al Alcorn may be number two. Nolan and I weren't employees. We were not getting any money from the company. We were living off of coins from our pinball machines.

Weaver: Right, so this was early, early on in history of Atari?

Dabney: Yes.

Weaver: Neither you nor Nolan were employees yet.

Dabney: Yes, exactly.

Weaver: Got it.

Dabney: We couldn't afford it. They were paying ransom on this place you know. Everything was expensive and so we had to pay utilities. We had a lot of stuff that we had to pay.

Weaver: Do you remember you talked about the game *Pong*. So, it's probably useful for you to describe the game in terms of what *Pong* was. Do you have any recollection of where the concept for *Pong* came from and why?

Dabney: Oh yeah. I know exactly where it came from. It came from Magnavox, and a thing called Odyssey. That's where the idea came from. Once you got to deal with Bally, Al Alcorn was hired. Nolan gave him the job of simulating the game that Odyssey had using the circuitry that I had invented. So that's what he did. It was so much fun to play. It was great. But Nolan said, "Oh no, we got to have a driving game." No, we're not going to have a driving game. We're going to do this. This is great. [Laughs.]

Al and I both beat up on Nolan. And Nolan had said, no. This is a game; this is what we're going to do. And then we had to come up with a name for it. Ping was a brand of golf clubs. That didn't work so we just decided *Pong*. We decided to call it *Pong*. We got in trouble with England, because in England, pong is poop. [Laughs.] Anyway, everybody went along with that.

Weaver: And the circuitry for *Pong* that you're talking about that allowed the ball to move on the screen, this was the circuitry that you had developed.

Dabney: Yes.

Weaver: When and where?

Dabney: That was at my daughter's bedroom. I moved her out of the bedroom, and I added something to the house. I set up a little office in there and I bought a TV set. Started buying some ICs at Clemental Electronics and started building this thing.[16] And it worked. First time, it worked. I started moving things around and neighbors would come around and watch a little dot moving around on the screen. They thought that was funny. [Laughs.]

Weaver: And what was Nolan's part in that development cycle?

Dabney: None. He didn't have any.

Weaver: Okay.

Dabney: He couldn't do anything. He was married to a lady named Paula, and Paula really wasn't very responsive to him doing stuff like that. Everything was done in my daughter's bedroom. Later on, he was saying it was his daughter's bedroom, but that wasn't true.

Weaver: And once the circuitry was developed and Al Alcorn was hired, how long did it take Al to develop what became known as *Pong*?

Dabney: Oh God, he was quick. I don't remember exactly but it couldn't have been more than a couple of months. Al Alcorn was one hell of an engineer. I mean he was

[16] It's possible Dabney meant to state Cramer Electronics, which he refers to later in the interview, and not Clemental Electronics.

a thinker. I'm an empirical code designer. I try things until they work. He figures it out before it works. [Laughs.] He was a good engineer.

Weaver: And was the first iteration of *Pong* with sound or without sound?

Dabney: Oh, it started without sound. It didn't have the segmented paddle either. Al, he went back, boop, boop, boop, he had that all done. I mean, he was just really quick. One of the biggest problems we had with a game was in Nevada. All the sheriffs were complaining because all you hear on their car radio is this PING, PING, PING, PING, PING. [Laughs.] They got really upset about that. So here again, Al Alcorn comes boom, boom, boom, he fixed it. Sent out a little kit. Everybody fixed all their games, everything was fine.

Weaver: And well, two things. Let me address that for just a minute. When you say that the radios from the sheriffs had "PING, PING, PING", may I assume that the game was leaking some sort of radio wave?

Dabney: Oh yeah, it was the *Pong* games when [the dot] hit the paddle. They made the noise. The noise was actually radiating out into the sheriffs' radios.

Weaver: So obviously, it was a frequency related problem.

Dabney: Oh yeah. The FCC got very upset about that.

Weaver: Right. Okay. And in terms of the sound who came up with the sound for *Pong*?

Dabney: Oh, Al did. I came up with the sound of *Computer Space* though.

Weaver: Okay, when Al finished *Pong*, what were your collective thoughts on the product? You, Al, and Nolan?

Dabney: Nolan wanted a [driving] game. He didn't want *Pong*. He wanted a driving game. He just argued, but Al and I really liked the *Pong* game the way it was. We said, "We're going with this." We finally did beat Nolan down. In the contract you showed me, I don't remember any mention of a driving game, but I know that Nolan told me the contract was for a driving game. I never saw a contract. I just go by what Nolan tells me.

Weaver: At a certain point did you all decide to test *Pong* and see how the public liked it?

Dabney: Oh yes.

Weaver: Would you talk about that? Where was the first place you put it?

Dabney: We had a contract with Bally, so we were making some money. We had enough money to build twelve games. We can do that, so we did. We built twelve games.

We sent one off to Bally. We kept one in the shop. And put ten of them out in some of the locations we had from Dave Ralstin from whom we bought all those pinball machines. So, we had some locations to put the new games. We put the *Pong* games in our locations and the failure mode was outrageous. [Laughs.] I'm sure you've heard that story. Al gets a call in the middle of the night saying he [the vendor] broke it. It doesn't work. Comes out with a pocket of quarters and the coin mechanism won't take any more coins.

Weaver: Ted, when Al finished *Pong* the first time around and you thought the product was very good. Did you put it somewhere so that you could try it out and see if other people thought that it was good?

Dabney: Yes, we did. We got that first one that Al built and then he built another one, so there were two of them. I built a cabinet, it was a small cabinet, not a big tall one. It was one that would fit on a barrel. I built this cabinet for him and Al actually built the game up and put it in the control pods and all that kind of thing. No one had met this guy, I don't remember his name, but he owned a tavern called Andy Capp's in Sunnyvale. I think it was Sunnyvale. He got the guy to let us put a game into Andy Capp's. It was a good place. It was a hangout place.

We put it out there, and it was there for a while. All of a sudden, Al had got this call in the middle of the night. "Your machine broke, it broke, it broke." Oh my God, Al runs down there and tries to figure out what's going on with it. I had built a coin box on the side, the kind you have for washing machines. A coin mechanism. Al opened that thing up and it was so full of quarters it wouldn't take anymore quarters. It was just full, and this was a pretty good size box for washing machines. That was what you call a class A problem. [Laughs.] We knew we had a winner then once that happened.

Weaver: Once you got the response from Andy Capp's Tavern, what did you do next?

Dabney: Well, we were still waiting for Bally. Everything was around Bally, Bally, Bally. They kept not responding. Nolan would call them and then, "Oh, yeah, well ... Oh, yeah well ..." I never got in on any of the conversations. I don't know what they actually said, but it never got anywhere satisfactory. That's when we decided we'll just build something ourselves. We could build these twelve [machines]. We could afford to do that and put them out at locations to see what we got. We had the locations we had gotten from Ralstin, then it was just getting something put in there. Man, we put those things in there.

Now there were a couple of them that didn't make very much money. But that was okay. All the rest of them were making tons of money. My daughter and I were going out to collect all the money for this thing. We had this suitcase that we carried the money in; She dropped it on her foot and broke her foot. [Laughs.] She had to wear a cast at school talking about dropping money on her foot. That was so much fun. We were making lots of money and that was good. We said, "Okay, we'll put together an income report for Bally Corporation.

We've got all these machines; we can do it." Boom, we put down all the money they make. We went through numbers and said, "They'll never believe we did that. Let's cut them all in half." Okay, we cut them all in half. It was still too big.

I said, "Cut them down to one third. Just report one third of what we actually made." And Nolan said, "Well a couple of them there don't make a lot of money, maybe we ought to ..." I said, "No way. If you're going to lie you've got to make sure you know what your lies are. You always have to lie the same. You can't go lying on this report different than this one." He agreed, so we put one third going all these. We sent that off to Bally. The next letter we got from them said that we had fudged the numbers. [Laughs.] That's how incredible it was. It really was incredible.

I mean, Bally owned the game, they paid for it. They paid $24,000 for it. It was their game. We can't build it; we can't sell it to somebody else. We can't do anything with it. I dictated a letter to Nolan for him to send to Bally saying, "Obviously, you don't like the game, but we can't really work on another one for you unless you reject this one." Anyway, the bottom line was Bally actually sent us a rejection letter and man, I tell you, we put that in a safe place because it wasn't part of the contract. That wasn't part of the contract that they could reject it, but once they rejected it, the contract was over. No more pinball machine, no more any of it, it's all done.

That was good, so we decided we were going to build it ourselves or go home. I said "I don't really want to go home. Let's make the decision that we don't want to go home, which means we have to make the decision that we're going to build them ourselves." We made that decision. Once we made that decision, you figure out how to do it, but until you do you can't. But we did and Al Alcorn was able to whip over to Cramer Electronics and Marshall Electronics and get enough ICs. I was able to actually buy some TV sets from a distributor in San Francisco. I had enough money in the bank for myself. Nolan got a friend of his that built PC boards to build them for us. I don't know what his arrangement with that was. I called Frank over at P.S. Hurlbut, the cabinet maker, and I told him I need fifteen cabinets and I don't know if I'm going to be able to pay it. He says, "You can pick them up in two weeks." "I don't have a truck." He said, "I'll deliver." That's fantastic, absolutely fantastic. Then we were sitting there, we were building all of these machines, we were building them like crazy. Nolan's standing up at the front of the office and I go up to him, I say, "What are you doing?" He says, "What do you mean?" I said, "You've got to go sell these things." "Oh. Oh, yeah." He said, "You're right." And went off.

About three hours later he came back, and I said, "Well, how'd it go?" He said he made three phone calls and sold three-hundred machines. Fifty to the first guy, one-hundred fifty to the next one, and a hundred and something to the other guy. This was all sight unseen. These guys had never seen this game before, and they still wanted to put it out. Well, Nolan, being a pretty smart guy, decided he's going to get Bob Portale in LA to give him a purchase order. He said, "Oh,

that's what we need. We need a purchase order." These game companies never get purchase orders. It's not even part of their business, but he did. He gave us a purchase order.

Nolan says, "Now we've got to borrow some money from the bank." I was working with the bank in Cupertino; Gary Teasdale at Wells Fargo Bank. I gave him a call. He said, "Yeah, you and your partner come in and we'll talk it over." On our way down to the bank Nolan says, "Now let me do all the talking." I said, "What?" He says, "I can tell them how good it is. How wonderful you know?" I said, "Wait a minute. Wait. The bank has no upside on this. The only thing they've got is the downside. They have absolutely no upside, so why do they care about the upside?" I said, "You've got to talk to them about what happens if it doesn't work, not what happens if it does work." "Oh, I know. You let me do the talking."

I let him do the talking. He talked us out of a loan. [Laughs.] Gary Teasdale called me back later and says, "No, I'm not giving you the money." I went down there, right there to Gary, and I said, "Look, you know I've got $3,000 in the bank. You know I've got that right? In your bank right here." I said, "I could use that money, but that's not what that money's for. Your money is for that." I said, "If it doesn't work then I'll use my money to bail us out. There's no way I'm going to use my money and then have it not work." Gary had a little problem with that, understanding the difference. Anyway, he did give us the loan. We got the $3,000, so that was good.

Weaver: Going back for a second, who was it who came up with that chess move, or Go move, to get Bally to actually reject you?

Dabney: It was me. It was me. I dictated the letter to Nolan. I told him exactly what to say in order to get Bally to reject it. Basically, we owe you a game, we want to give you a video game, and unless you reject this game we can't work on anything else. That's basically what I told Nolan to tell Bally.

Weaver: The reason you wanted them to reject was why?

Dabney: Because then we own the game and they don't. [Laughs.] Yeah, because they had paid for it. They paid $24,000 for it. It's their game until they rejected it. Then it was our game.

Weaver: Ted, when the time came for Atari to decide to build the games, internally, who was for it? Who was against it? Who was reluctant? How did it go between the three of you?

Dabney: Yeah, okay. We're sitting around the office. Al Alcorn, Nolan Bushnell, and myself: We're just sitting there looking at each other. That's all we're doing. Just sitting there looking at each other. What do we do now? We're going through the numbers; the numbers are terrible. We can't afford cabinets; We can't afford

TV sets. We figured a minimum build of fifty units. It had to be a minimum of fifty units, otherwise, why bother? We had our ten machines out. We looked into the price and there's no way we could afford it. I said, "Look, we've got to make a decision. Either we're going to go into manufacturing or we're going to go home, and I don't want to go home."

Well, nobody wanted to go home. I said, "Let's just make a decision we're going to go into manufacturing and then figure out what we have to do, to do it." That's the only way you can do it. You've got to make the decision first. We made the decision, we started going through the process. Al Alcorn working with Cramer Electronics and Marshall Electronics getting all the parts. I don't know whether he used credit. I don't know how he did it. We had friends there, so that helped. I got a hold of some Sony TV sets from a distributor in San Francisco, and I had enough cash in the bank to actually pay for those. The PC boards, Nolan had a friend that built PC boards, I don't know if you can call him a friend, an acquaintance that built PC boards. He got the PC boards.

Then I called P.S. Hurlbut, the cabinet manufacturer, called Frank over there, and told him I needed fifty cabinets. I said, "I don't know if I'm ever going to be able to pay you." He says, "You can pick them up in two weeks." I said, "We don't have a truck." He says, "I'll deliver." That was the big one, because that was the real expensive one. He said, "Yeah." He didn't care whether I could pay him or not. I thought that was really incredible.

Weaver: Ted, you talked about the smaller loan that you were able to get from Gary Teasdale.

Dabney: Yes?

Weaver: Wasn't there ever a time where you had to get a bigger loan and the special industries group at the bank had to get involved?

Dabney: I know nothing about any of that.

Weaver: Okay, so you weren't involved in any of the larger loans?

Dabney: No. I didn't stick around at Atari all that long.

Weaver: Did you stick around at Atari to get the three hundred units out?

Dabney: Yeah. Something like that, yeah. At least the first 50. There were more because I remember we had to ship them, and I got involved in the shipping of them. Yeah, I was still around there then. Yes.

Weaver: How did you source the Hitachi televisions? In other words, how'd you find your local source?

Dabney: I just "hired" a phone book, started calling people and found some guy in San Francisco, a Hitachi distributor. He said he would give them to me at $60 a piece or something like that. I said, "All right. I'll take them."

Weaver: Did you actually go pick them up?

Dabney: No, they were delivered. Delivered.

Weaver: How were the units assembled?

Dabney: Okay, where should I start? Al Alcorn had to build and test all the PC boards. That was the hard part. You got a lot of bad ICs sometimes and he had to go through all of them and get them all working. My job: I had to take all the TV sets that we bought and take the tuners out of them so that we could go connect the video directly into the TV. I had to do all that. Then I had to figure out a way to mount the TV sets in the cabinets. On, and on, and on. I had to figure out the coin mechanism. I came up with a shiny tin can, cut the top off the tin can and stuck it down in there. It was one of these one-gallon cans. I had to get a coin mechanism. All of it, I mean, that was all my stuff. I don't even remember how I did it all, but I got it all done.

That was the hard part: Actually, building the games. Especially when you're trying to do fifty machines in 1,700 square feet and you're trying to hire people to help you out, it's very, very hard to do, but we did it. You just keep doing it until it gets done.

Weaver: That's how you built the first fifty?

Dabney: Yes, and the second fifty. They all were done pretty much the same way.

Weaver: When did you actually leave Atari?

Dabney: I've got to talk about some stuff that happened before that. We had that 1,700 square feet, got another 1,700 square feet, and then we rented a roller rink. We opened that up and that's where we actually built a majority of the machines. Nolan and I were going around looking at all this stuff and we know we need a bigger building. Even the roller rink wasn't big enough. We started going around, we were out in Los Gatos and the Empanel Cadre Building was available. We looked at that, it was 30,000 square feet. We looked in the windows, which was about all we could do. It looked like something that we could do in it that seemed pretty good.

Well, this is when it all started. We're driving back from the Empanel Cadre Building while making the decision that we're going to pursue it. Nolan is being very quiet. He asks me, "What's it going to be like to be really, really rich?" I told him, I said, "I'm sorry Nolan, your relationship with money is always the same. The only thing that's going to change is the number of zeros, but your

relationship with money is going to be always the same." That moment Nolan became his money. Once he did, there was no reason to hang around with him anymore, because it just didn't matter. Once it all becomes money, it's just not worth anything.

When I worked at Hewlett-Packard for a little while, David Packard would come around with donuts for the assembly line to all us klutz guys. David Packard told me, "You take care of your products, you take care of your customers, the money will take care of itself." I told Nolan, "You want to take care of the money, your customers are going to suffer, your product's going to suffer." But that's where he was, and I couldn't hang around anymore. He offered to buy me out.

Weaver: We'll get to that in a minute. Early on you were in charge of all the manufacturing of the company?

Dabney: Yes.

Weaver: Atari's first CEO, was it Fred Marincic?[17]

Dabney: No. No.

Weaver: Okay. Who was Atari's first CEO?

Dabney: Fred Marincic was hired in as an accountant. I was trying to do all of the accounting. I was doing all the double entry paperwork, trying to keep track of the money, while I'm doing all this other stuff too. We knew we needed a finance guy, so Nolan hired Fred Marincic to come in and do that, and that's what he did. That's all he did. I heard later on that his fingers were getting a little sticky, but I don't know that for certain either. I don't know, that was just something I heard.

Weaver: He left the company? Or was fired?

Dabney: Again, I don't know. By this time, I didn't give damn very much about anything. It wasn't what I wanted. Interestingly, when we decided to incorporate, we couldn't use the name Syzygy. The [California] Secretary of State sent us a letter saying give them three names and he'll pick one. The Secretary of State was Jerry Brown at the time.

Weaver: You were speaking about doing the bookkeeping along with everything else. Did you create whatever manufacturing they had early on?

Dabney: Yeah.

Weaver: Was there a process? Do you want to talk about...

[19] Fred Marincic was Chief Financial Officer (CFO), not Chief Executive Officer (CEO).

Dabney: Yeah, I had to! There's nothing to talk about. You just gotta build everything that needs to be built. You gotta have cabinets. You gotta have doors. [Engineers] got to have this, that, and the other thing. You gotta have the tv set and add modifications to it for the video. Gotta have place to mount the PC board and a coin mechanism. Get a place for all the coins to go. It's all something that has to be done, you know? To tell you what I did to do it, I don't remember.

Weaver: You didn't have any experience in this, correct?

Dabney: No!

Weaver: So how did you set up an assembly line? How did...

Dabney: I'm smart. Like I said, you make a decision and you figure out how to do it. I had to manufacture *Pong*s, so I figured out how to manufacture *Pong*s.

Weaver: Where did you hire people?

Dabney: Anybody who would walk in the door, we hired. [Laughs.] I'd pick up hitchhikers and hire them.

Weaver: A little later on, Atari brought in a new management team.

Dabney: Uh, yeah.

Weaver: Do you remember who the president was?

Dabney: Oh yeah.

Weaver: Would you talk about that a little bit?

Dabney: Yeah. Nolan wanted my stock, forty percent, and he wanted to give it to these other people. I don't remember his name; I do, but I don't want to mention his name. He had hired this guy who was a corporate psychologist. He was really, really rich and that's all that Nolan needed. He had this guy with a master's degree. I was already his Vice President of Engineering. I can't remember his name.

Weaver: John Wakefield?

Dabney: Wakefield was the President. He was hired as the president; he was the industrial psychologist.

Weaver: Was it John Wakefield or John Wakeland?

Dabney: Wakefield. Yeah. I can't remember the engineer's name who he hired as Vice President of Engineering [Lloyd Warman]and he hired a salesman from Cramer as marketing manager [Pat Karns]. And they got this guy from Hewitt-Packard who he says is the greatest in the whole world.[18] Gave me all this crap about him.

One of the conditions of me selling out to Nolan is that he is going to give me the street operations: Pinball machines, All the *Pong* games, and all the arcade machines. He was going to give that to me. Sounds good to me. Well, I found out later that he was charging me $90,000 for it. [Laughs.] So, I walked away from that completely. It was obvious to me that Atari was going to hell in a handbasket. I mean, going down quickly.

I got a hold of him one day; I happen to be talking to that guy – his name was Les Oliver – about that $90,000 he said I owed him. I went over to Nolan; he was standing in his office. I walked over to him and said, "Where did you get this guy?" "Oh, that's Les Oliver. He did this, he did that." I said, "I think David Packard being Under-Secretary of Defense had more to do with it."

I said, "Come on, let's go take a ride." We both had motorcycles that day, so we went down to a pizza parlor. I said, "Nolan, you gotta get rid of these people. You got a vice president of the company who can only decorate his office. That's all he's done, I mean, while he was there! You got a Vice President of Engineering that's incapable of making a decision." That blew Nolan's mind because he didn't know I knew the guy. That was a PhD mentality, right there. Then I said, "You hired a guy as a marketing manager who doesn't even know how to spell 'market'. He doesn't even know what marketing is! He's a damn good salesman but he's not a marketing guy." Nolan didn't realize there was a difference between marketing and sales. Then I said, "You got this guy Les Oliver, he is a total loss." I said, "You got to get rid of them." He says "Oh, they're my friends! They're my friends!" "Keep your friends or keep your business. Your choice." He did. He fired them all.

Weaver: Ted, I want to go back for a second because you just talked about how you had gone back to Atari. This is the post-*Pong* massive sales and the new management that Nolan put in. Unless I'm missing something, you're now on the outside, correct? You're coming in from the outside?

Dabney: Yeah, yeah.

Weaver: I'm trying to understand. You obviously had a very unique relationship with Nolan. In other words, Nolan has bought you out?

Dabney: Yeah.

[22] Most likely a reference to Les Oliver or Dick Mobilio, who are noted to have come to Atari from Hewitt-Packard around the same time.

Weaver: And you have the coin route now-

Dabney: Yeah.

Weaver: I want to try and better understand, why did you come back? Why are you giving Nolan friendly advice? What are you feeling toward him now? What was your relationship with him?

Dabney: Okay, okay. We really didn't have much of a relationship. But I was still on the Board of Directors. I had to keep going back over there because Nolan was trying to get me to pay, or the guy, Les Oliver, was trying to get me to pay the $90,000 for the coin-op stops. I didn't even know he was charging me for it, but I found out.

I happened to see Nolan down the hallway and I just went over to him. I said, "We've got to talk." Because obviously Atari was into going big, big, big trouble. We had our motorcycles that day, so we went down to the pizza parlor and I started talking to Nolan about it. "These people you got are just bad actors. They're no good. They cannot do the job that you've hired them to do."

He was saying they were his friends and I said, "Fine, keep your friends or keep your company, your choice." Well, he got rid of them and he brought in Joe Keenan. Joe Keenan, what a hell of a smart guy! A really sharp dude. He turned Atari around so fast, you never even realized it had been going down. He did a beautiful job. I don't know where he got [that talent]. Nolan found Joe Keenan across the street mowing his lawn, but boy, it turned out to be just the perfect, perfect thing.

So that's one of the times Nolan took my advice and he really did well with it. That was good. Sometimes, he didn't do well. I don't know where you want me to go with that one. The thing he did with the Pizza Time Theatre, but we don't want to get into Pizza Time yet.

Weaver: Yeah, not yet, but you mentioned something. Even though you were bought out, you still stayed on the board?

Dabney: Yes.

Weaver: How long did you stay on the board?

Dabney: Until Nolan screwed me up. What happened is, we started a company called Kee Games. People are asking me about Kee Games, what should I tell them? So, he told me what to tell them. When they called me about Kee Games I told them what Nolan told me to tell them.

Well, it turned out Nolan had set me up. He was telling me stuff that he didn't want me to tell them. That's when he decided to kick me off the board. That

was the end of that. Now I really had nothing to do with Atari at all anymore. I went to work for Raytheon. I went to work for different companies and was doing fine.

But then Nolan sold off; the company did so well, he sold it off to Warner Communications. I heard about it. I was getting all kinds of phone calls from people about what kind of deal it was and everything. I don't know, I don't know what kind of deal. But I heard about how much money he sold it for, it was for a really, really, small amount. That's what I thought.

What was really funny is, about six months later, Nolan got kicked out of Warner Communications just like he had kicked me out of Atari. [Laughs.] He blamed me for that. He thought I had something to do with it. That was so funny, oh man. But I didn't, I had nothing to do with Warner Communications.

Anyway, he had kept his things with Pizza Time Theater, and he wanted to do that. Remember, I told you, a long time ago when we first met he was talking about that kind of thing. That was his first love. He did; he built one.

I was over at his house one time; I had turned him on to a wine called Gamay Beaujolais. When he was over in France, he found some Beaujolais Villages that was very squandered. They whiffled him into buying an older one. Turns out that Gamay Beaujolais Villages goes bad with time. It doesn't get better with time, so Nolan was telling me about that. We were over at his house drinking up his bad wine. And he says, "Hey Dabney, you want to know what I really hate about you?"

I said, "What?"

"You know what I really, really hate about you?"

"No, what?"

He said, "You remember when you told me the only thing that was going to change was the number of zeros?"

I said, "Yeah."

He said, "You wanna know what I really, really hate about you?"

I said, "What?"

He said, "You had no right to know that." [Laughs.]

That was fun. But anyway, he had his Pizza Time Theater and he had built one in Town and Country Village [San Jose, California]. First, he asked me if I wanted to go in with him. I said, "No, I'd rather be your friend than your partner.

Been there, done that." And he says, "Go down and take a look at my pizza parlor, tell me what you think." I said, "Okay, I sure will." So, I did, I went down there. First place, the place was dirty. That was the first thing I noticed. The other thing was the pizza wasn't very good. That wasn't good. Third thing was that it was so noisy that when they tried to announce your pizza was ready, I couldn't hear anything. It was just too noisy. I went back and gave Nolan a report. I said, "Boy it's dirty, got to be cleaned up." He said, "Fine." I said, "The pizza is not very good."

He says, "Mediocre is good enough."

I said, "No, mediocre isn't good enough."

"Oh, yeah it is, yeah it is."

I said, "If mediocre is your standard, anything less than that is unacceptable."

"Oh, no we're okay, we're okay.

I told him about not being able to tell when my pizza was ready. He says, "Well you've got to invent something for me." "Oh, okay." So, I did. I invented something for him. It was a call out number system. I called it *Notalog*. It was a box with a TV set, and you push a button and puts a big number up there. When your number is called, then it goes into a small queue. A guy helped me with the software on that.

I told Nolan, "I'm going to overcharge you." I said, "I'm building these at home in my garage and I'm going to overcharge you like hell for these things as long as I'm supplying them. If you ever want to build them yourself just let me know. I'll give you everything you need." Anyway, so I overcharged him. I was making tons of money off these things. He says what he really wants is a video game for his Pizza Time Theatre. Wanted just a video game that's just dedicated to this. I said okay. So, a friend of mine, Tom Smith, and I, started a company called Syzygy Game Company. I got ahold Isaac Asimov and got permission to use his name and I created this game called *Isaac Asimov Presents Super Quiz*.

Anyway, I got to use his name. That was a good one because now we had ICs. We could plug in the ICs and get all different kinds of questions for everything. It was great. It was really good. I started selling those to Pizza Time along with my *Notalogs* to Pizza Time. I was making so much money that, while I was working at Raytheon, I would get my paycheck and I'd put it in the drawer because I didn't need the money. The controller comes around to me later on and say, "Hey you got to cash those checks." Oh, okay, I'll go cash them. But it was really a fun time.

So anyway, that went on for quite a while. I did pretty well. All of a sudden, I get this call. I got a bunch of these *Notalog* machines because that includes a console

plus a TV set and all that. I get ready to ship all of these things. I get this phone call, canceling the order. "Canceling? I've got them all ready to go." "Oh no, we're building them ourselves." "Why didn't you tell me that? I'd have given you all the stuff. I've got all this hardware, I've got all these ICs, I've got tons and tons of stuff. I've got all ... Why didn't you tell me?" "I don't know." No one knew anything.

So, it was gone, I didn't get paid for that. Then I sent a whole bunch of the *Isaac Asimov Presents Super Quiz* machines. That was exactly the time they went belly up. [Laughs.] I never got paid for that. So, Nolan still owes me $41,600. That includes $4,000 for a motor arm boat.[19] He still owes me that. I figured 2% a year for 44 years, that's $90,000. He owes me $90,000. He won't pay, but that's all right.

Weaver: Is it fair to characterize your relationship with Nolan as a love/hate relationship?

Dabney: Yes, absolutely. You got to remember, we were really very close friends before that thing about what's it going to be like to be really, really rich. We were really very close. We worked together. We did all kinds of stuff together. I really enjoyed that time. He was a very, very close friend. But then once he became his money, there was just no room. There was no room. But I still enjoyed him. You know what I mean? I liked hanging around with him. He bought that Folgers mansion. That was fun. He had a snooker table; I beat him one time at snooker. His wife says, "Oh, who won?" He goes, "I don't know." But I beat him. [Laughs.] It was a fun. He was a game player. He liked playing games. I liked playing games. He was a lot better than I was, but it doesn't matter.

Weaver: Looking back, I'm trying to figure out, on the one hand, you're talking about him literally phasing you out of Atari.

Dabney: Yes-

Weaver: By, I don't mean to inject words here, but it almost sounds like subterfuge. In other words, feeding you something that was designed to get you in trouble?

Dabney: Oh, that was out of the board of directors.

Weaver: But that was a way to get rid of you.

Dabney: Yeah. That was the board of directors, nothing to do with the buyout. The buyout had already occurred.

Weaver: By the way, you kept the Syzygy name in the buyout?

[19] The interviewer notes that he believes Dabney was referring to a sailing winch on a sailboat that Bushnell and Dabney once jointly owned.

Dabney: No. The Syzygy name is owned by Tim Cord, a lawyer. That's why we couldn't use it. I just used it because I called it Syzygy Game Company. I wasn't incorporating or anything. Tom Smith and I just started a company. I just called it Syzygy Game Company.

Weaver: But when he wanted you to build things for Pizza Time Theatre, and you told him you were going to overcharge him, why do you think he let you just continue to overcharge him? Was it a way of saying I'm sorry?

Dabney: No, it was because he wanted them. I can build them, and he wanted them, so he had to pay extra for them. That's all. I invented this thing; it was my thing. If he wanted them he had to pay for them.

Weaver: But then if he wanted them, why would he let you continue to build them and then, without telling you, build them himself when you'd already said you're going to turn everything over?

Dabney: I don't know. You have got to ask him that one, I don't know. I don't know why he did that. I told him, right up front. I said, "I'm going to overcharge you." I said, "If you ever want to build your own you just let me know. I'll give you everything I got."

Weaver: Do you see yourself in any way as sort of the equivalent of the Steve Wozniak to Steve Jobs? Do you understand?

Dabney: Steve Jobs had a lot of respect for his Wozniak because Wozniak was the worker. He's the one that did the stuff. Steve Jobs was never about money. He was about his health. He was about gurus. He was about all kinds of stuff, but he was never about money. No. Steve Jobs and Steve Wozniak got along really well. They were friends. Both argued a lot. But that's part of being a friend.

Weaver: So how would you characterize your relationship with Nolan?

Dabney: Nolan didn't want to share it with me, that's all. He just wanted it all himself. He wanted all the glory. It's like the circuit I designed. The motion circuit that we used. What did he do? He patented it in his name. He doesn't have room for anybody but himself. I just couldn't hang around in there anymore. But it doesn't mean I didn't like him. I still like him. That'd be kind of dumb.

Weaver: But, so, does that mean Nolan was all about money and you weren't?

Dabney: Yes.

Weaver: And that was the divide?

Dabney: Yes. Absolutely. That was it. He was about the money. Anything with money, money, money. That's why he hired Wakefield. Wakefield was rich. Never mind he's an industrial psychologist, but he's rich so he must be smart.

Weaver: Ted, I want to take you back to *Computer Space* for just a moment.

Dabney: Sure.

Weaver: Who designed the circuit board for *Computer Space*?

Dabney: I think it had to be Nolan.

Weaver: Who did the schematics for it?

Dabney: I did the schematics.

Weaver: Why did you end up using diodes?

Dabney: Because I had them. Because I bought a whole bunch of diodes from a guy. I had them, so I used them.

Weaver: Why not use TTL [Transistor-Transistor Logic], or some other type of logic?

Dabney: There wasn't any of that. These were just cheap diodes; we didn't have anything else. We didn't have diode matrices, or anything.

Weaver: Why was the *Computer Space* circuit board built like a spaceship?

Dabney: Because when you're trying to invent something, you have to write the logic to get things that rotate around. You gotta know where you're looking and when you're looking at it. By having the diodes actually in the shape of a rocket ship, we could actually look and see where they were by using an oscilloscope. You could find out where it is, how it matches, and you can say "Oh, that was not supposed to be that way, that one's supposed to be that way," and then you change the wires. Actually, it wasn't so much for troubleshooting as it was for actually inventing the damned thing in the first place.

Weaver: You did that?

Dabney: Well, I did some of it, Nolan did some of it, and I think Steve Bristow may have done some of it, but that is something I don't know. That was just something I heard later.

Weaver: What about the kind of weird, modernistic cabinet of fiberglass? How did that come about?

Dabney: I don't know. [Laughs.] All of a sudden Nolan showed up with it. One of the things I was brought into Nutting for was to build cabinets. I was building cabinets, and all of a sudden Nolan shows up with this fiberglass thing, and that was it. Now, my job was trying to fit all this crap into that one [cabinet]. Get a coin mechanism. Get a control board. Oh yeah, it was a job.

Weaver: I want to go back for a second, because you talked about the ten prototypes that you made of *Pong*, and you put them into-

Dabney: There were twelve of them.

Weaver: Right, but you put ten out.

Dabney: Yeah.

Weaver: I wanted to just ask you, in your opinion, you said that some of them did really well, and some of them didn't do so well. I know that one of the places that the game did very well was the Dutch Goose near Stanford. And one of the places that the game did not too well, was at a local pizza parlor.

Dabney: Could well be. I don't know which ones did well, and which ones didn't. I didn't keep track of that.

Weaver: Well, I guess my real question is, why do think that the game did better at a place near Stanford than a place that was like a local pizza parlor.

Dabney: Probably because it was near Stanford. You know, because you've got a lot of people there that like that sort of thing. Stanford had younger people, they like to play games, people at Stanford generally have money. A local pizza parlor may not have a lot of people with a lot of money. I don't know.

Weaver: Let me ask you a follow on to that. Do you remember, of course, that there was an aspect of the game that was maybe not totally intuitive? Do you think that had anything to do with it, with a college crowd, versus people who weren't a college crowd?

Dabney: I'm not sure I understand your question.

Weaver: Well, in the *Computer Space* portion of how the ships operated in space.

Dabney: Oh, I thought you were talking about *Pong*.

Weaver: Oh, I'm sorry, I was talking in this case about *Computer Space*.

Dabney: Oh, okay.

Weaver: Where I'm going is, why do you think it did well at Stanford versus not at Stanford.

Dabney: Probably fascination. People get fascinated with being able to fiddle with something on a TV set. You can't normally do that. Now all of a sudden, out here there got a thing that can actually move something around on a TV set. That's pretty fascinating.

Weaver: Do you think that the concept of something being a realistic physics simulation, in other words, the concept of "you're just going to keep traveling in space unless you turn 180 degrees and start retro-firing?" Do you think that that was not intuitive to people who didn't understand anything about physics?

Dabney: I don't think. I think they just fiddled with the game until they got it to do what they wanted to do. That's what I did. You know, you turn it, you do one thing, or you do something else, do something else. You just keep doing that until you figure it all out. The same like with a pinball machine, you keep fiddling with it until you figure it out.

Weaver: Okay.

Dabney: And, like I say, it's fascinating to be able just to move something on a TV screen. You could never do that before.

Weaver: Was there anything about Atari, during your time at Atari, that you feel you haven't covered, or that you want to make sure that people know about?

Dabney: I can't think of anything. Pretty much covered most everything about Atari that I know.

Weaver: Let me ask you a side question that sort of comes out of Atari, but it again gets into your relationship with Nolan Bushnell, and also the Pizza Time [Theatre], which we'll get into in just a moment. You've talked about Nolan getting you out of Atari, and then basically getting you removed from the Board. And yet, at the time, the two of you still had discussions with one another.

Dabney: Yeah, a little bit. I didn't really start having a discussion with him until after that situation with Les Oliver, when he was trying to get me to pay $90,000. That was when we started a conversation again, and I told him about the people he had hired.

Weaver: Okay. I want to go back for a second, to when you left Atari and you were given the coin route that you had previously had. Was there a time when you eventually sold it back to Nolan, personally?

Dabney: Oh, I just walked away from it. You're talking about the coin-operated stuff?

Weaver: Yeah.

Dabney: No, once he said I owed him $90,000 on it, I said, "To hell with it." [Chuckles.] I walked away. That was the end of it. I wasn't going to pay him any $90,000 reward. I didn't know he was going to charge me that.

Weaver: Did Nolan ever do anything with that coin route? In other words-

Dabney: I don't know.

Weaver: Okay.

Dabney: I don't much care. All the people I had working for me, Joe Miller and some of these other guys, they all left when I left.

Weaver: Just as a side question, when you were actually manufacturing units, inside the roller rink, the larger space, how did people get around to get parts and build things?

Dabney: On roller skates. [Laughs.] Some of them had roller skates. It was a good, good floor.

Weaver: Was that something that just happened by itself?

Dabney: Yeah, they just decided to do it. It was the people who worked there that did it, it wasn't anything we did.

Weaver: Ah, interesting. Okay. How did you get involved with another game company called Meadows Games?

Dabney: Oh, remember American Optical, when I left there? I don't know what I was doing, but I ran into this guy, Tom Smith. I had met him somewhere before; I don't remember where. He said that he was working at Meadows Games. He asked me to come over there, I said, fine, I'll come over. Well, Meadows Games hired me because I was who I was. I guess they figured that would give them some credibility with the industry. But I didn't do much there, I tried to work with a fly spot scanner, but didn't have much luck with that.[20]

But, Tom Smith and I got along really well. We were really close buds along with Joyce, his wife. It was great, wonderful times. We hung around together. Tom Smith was the kind of guy, you walk down the street with Tom Smith, and almost everybody we come across, they know him. "Hi, Tom. How you doing? How you doing?" Incredible just to be around him, and all the people that he knew. He was an incredible guy. The real bummer was when they had a house

[20] A fly spot scanner is a CRT-based technology that uses a focused source of light to scan an object, usually a flat image, and converts the output to a TV signal.

down there – I can't remember where it was – anyway, the rains came and crushed the house. A landslide crushed the back of the house and Joyce got killed. That was a bummer.

Weaver: I'm about to ask you, you know you've received actual credit for *Cobra Gunship*, did you know that?

Dabney: I did? [Laughs.]

Weaver: It's in the record that you actually are credited, so it's an interesting (point), if you didn't know it.

Dabney: I didn't know it.

Weaver: Alright, so, Ted, in terms of Meadows Games, you are credited on *Cobra Gunship*. Do you remember developing that game?

Dabney: No, I didn't develop that game. I helped whoever did. I can't remember his name now. He was the guy who didn't like me very much. But anyway, I helped him a lot on it, but no, I didn't develop that game.

Weaver: Meadows' biggest hit was actually a *Pong* clone called *Flim-Flam*. Were you involved in the design of that game?

Dabney: No. No, no.

Weaver: Why did you end up leaving Meadows?

Dabney: Probably because Meadows wasn't really doing all that well, and as far as I know, I may have been laid off. I don't remember. But, that's when I decided I really wanted to be an applications engineer.

Weaver: How did you become involved with Chuck E. Cheese, or Pizza Time?

Dabney: Nolan Bushnell had built his first one, it was kind of a small one, over in Town and Country Village, and he asked me to go take a look at it. Well, he also asked me if I wanted to come in with him, and I said no, I'd rather be his friend than his partner. I said, been there, done that. So, he said, well go take a look at my pizza parlor and tell me what you think. Because I guess he still thought my opinion was pretty good.

So, I did, I went over, I looked at it. The place was dirty, the pizza wasn't very good, and I couldn't tell when my pizza was ready because it was so noisy. They put the sound out over the microphone, and you couldn't hear anything. So, I went back, and I gave him the report. I said, "The place is dirty." He said, "Oh, we'll clean it up." I said, "Pizza's not very good." He says, "Mediocre pizza is good enough." I said, "No it's not." He said "Yeah, it is." He's not in the business

of selling pizza, he's in the business of selling games. I told him my father was an auditor. My father worked for construction companies and hotels, and in hotels, the biggest problem with hotels is the food service. I said, "No, you gonna have food service, that's gonna be your biggest problem" "If you have mediocre pizza, anything less than that is not acceptable."

Well, he didn't buy any of that. As far as being able to tell when the pizza was ready, I invented the *Notalog* system that would put the numbers up on a TV screen, so you could see what numbers were called. You didn't have to listen to it over the noise.

Weaver: Would you say that your Asimov game concept for the computer quiz game was similar to, or related to, the quiz game at Nutting?

Dabney: No, not really. I added much more depth of things. I don't even really remember how Nutting's was. Seemed to me it was on film or something, I can't remember. But mine was all on ICs and on ROM [Read-Only Memory]. I could change the ROM and have science questions on one, math questions on another one, movie questions on other ones, TV questions on other ones. I had all these different chips and you could change what the programming was just by changing the chip. So, no, other than the fact that it was a quiz game, it was quite a bit different.

Weaver: How did you come up with the idea for it, and how long did it take you to make?

Dabney: I got the idea from reading a book called *Isaac Asimov Presents Super Quiz*. I read the book, and it looked pretty good. It was kind of fun. I said, that's what I want. I started working on that and hired ... Actually, this is the first time I ever do this, but I bought a computer; a RadioShack computer and a RadioShack hard drive. Ten thousand dollars for the damned hard drive. Or no, I don't know, maybe it was thirty thousand? It was a lot of money for an 8K hard drive! I got that and I started programming, but I didn't know how to program. I got a hold of this guy, founded a company up in Washington called Microsoft. I call this guy and got him to sell me a cross-assembler. I got the cross-assembler and then I was able to write code. I actually wrote the code for that game myself, not knowing anything about programming. That was fun.

Weaver: Who was the guy at Microsoft that you spoke to?

Dabney: The guy who owns it. What's his name?

Weaver: Bill Gates?

Dabney: Gates, that's it. Bill Gates, yeah... He wasn't doing anything really very significant then, in those days. That was before IBM came along, so he was selling cross-assemblers.

Weaver: How would you characterize your relationship now with Nolan?

Dabney: We don't have one. There's nothing. He never calls, I never call. I don't even know his number anymore. Like I say, I lost all my information when that fire burned my house down.

Weaver: You clearly have played a seminal part in video game history. Are you a video game player?

Dabney: No, no. I have really no interest. There are a couple of games I kinda had fun with. I think one was called *Quick*, and one was called *Pac-Man*. Yeah, *Pac-Man* was kinda fun. But, that's about it. Not much else.

Weaver: How would you characterize your involvement in the video game industry? Was it because you were so involved in games, or was it because you had something to build?

Dabney: It's because Nolan had an idea, and I could do it. That was really it. Had nothing to do with games, other than that's what it turned out to be. If he had said pizza parlor, I would have done that one too. It didn't matter what it was, if he had a good idea, I would have done it, whatever it was.

Weaver: Changing the subject for a little bit, now looking back over everything. What would be your advice to budding entrepreneurs today?

Dabney: My advice? [Laughs.] Find out what you want to do and do it. You just got to make a decision. You make a decision to do something and then just figure out what it takes to get it done. If you're not willing to make the decision, then stay home. Don't do it.

Weaver: Do you see today a difference in people who either invent or innovate than when you were younger? Societally, do you see any differences?

Dabney: Not really. There's not a whole lot of difference between then and now. People are still people. Some people are smarter than others. Some people are just cleverer. They have a vision, that's what it is, a vision. You know, some think of all this stuff with the internet, and all that kind of stuff, they have a vision of something. Not only do they have the vision, but they have an idea about how to get it done. And if they don't know how to get it done, they'll find somebody that does. But, they got the idea. That's what it's all about, the idea, and the willingness to do something about it. I don't know if that answers your question or not.

Weaver: Yes, sort of. Ted, I would like to get a little of your educational background and your family background so looking for answers to the following questions: How many brothers and sisters did you have in your immediate family, and where did you fall in birth order?

Dabney: I was the oldest son of two. My mother had a child before my dad married her, so I had a half-sister that was a little older than me. My little brother came along five years after me. But that wasn't the family because my mother and father got divorced when I was five years old, and my Dad raised my brother and me by ourselves.

Weaver: So, you were the oldest in your family?

Dabney: I was the oldest in my family. My father was older.

Weaver: What did your parents do?

Dabney: I'm not sure what my mother did because I didn't live with her. I didn't know anything about her. But my father was an accountant, and he worked for construction companies and hotels. And he was an auditor.

Weaver: In terms of your early education before you went into the military, did you get your high school diploma?

Dabney: Yes.

Weaver: And how would you characterize yourself as a student, if you were being objective?

Dabney: Piss poor.

Weaver: Okay. Who was the most influential teacher or teachers in your life and why?

Dabney: The most influential person in my life was a math teacher named Walker. I don't know anything about him, but he taught everything. I was a senior, and I had to take junior algebra because I hadn't had any algebra. I had already taken business math, but I had to have algebra in order to graduate.

So, I was a senior, and I was taking a junior class. This teacher, Walker, took us through so much mathematics and physics that it was incredible. I'm not sure I learned a lot, but I was presented with an awful lot of information, things like determinants. You know what determinants are? Some people don't know what they are.

We had ways of taking a three-order determinant and turning it into a two-order determinant. That's pretty tricky, and he taught us about Boolean algebra, which they now they call something else completely. I don't even know what they call it now. But there's cups and caps and things that go together and don't go together.

He taught us about differential calculus. Turned out that wasn't near as hard as integral calculus. The most incredible thing was that we had one test [question]

on the final, and that was prove the binomial theorem by mathematical induction. That's not an easy job.

I barely passed, but I did pass. So, he was the most influential guy. And like I said, it wasn't the idea of remembering anything. What it was is that you could figure it out. If you knew the calculus, if you just had the basics of calculus, you could create whatever equation you needed. The area or a volume of a cone, the area of a circle, anything. You could derive these equations. I thought you just had to remember them, but no. You could derive them; you could figure out exactly what the equations were supposed to be just by knowing calculus. That was amazing to me.

Weaver: So, after high school, did you attend college?

Dabney: I tried. I wanted to get more mathematics, and so I was taking some algebra courses. And I got to a point where they started talking about universal conversions within an interval. I had no idea what that meant. I couldn't come up with a picture. I couldn't figure it out at all, and so I had to just drop out because I couldn't go any further. If you can't figure that one out, what do you do?

Weaver: So, where did you get your early background in engineering or electronics?

Dabney: After I got out of high school. I gotta back up a little bit. When I was 16 years old, I got a summer job with the Division of Highways. It was the kind of job you have to be 18 to get, but I got it when I was 16. And I worked for the Bridge Department as a surveyor, and I was good. I was really good at it.

I was working on the freeway in San Francisco between Hospital Curve and the Bay Bridge. That steel was 40 feet off the ground, eight inches wide with shear lugs, and I would walk all that. It was great. Anyway, I wound up being a real damn good rear chainman.

So, what happened when I got out of high school, I decided I was going to be surveyor because I was a surveyor. And I got a job with McCandless and Jet in Menlo Park, and within about a month, I was the Assistant Chief of Party. I mean, that's pretty big. Assistant Chief of Party is the one that takes all the notes and does all the calculations and stuff. That was intense.

But then something happened that really shortened it. Winter came. You can't be a surveyor in the winter. You just can't do it. So, I had to find something else to do. I joined the Marine Corps because I was raised in San Francisco during the Second World War and all there was were sailors and soldiers. And I didn't want to be a sailor or a soldier, so I decided to become a Marine.

And while I was in the Marine Corps, I had an opportunity to sign up for electronics school if I would extend my enlistment for a year. So, I did. I wound

up stationed at Treasure Island. For a guy who's from San Francisco, that's a good place to be. [Laughs.] So, I had 16 weeks of electronics school at Treasure Island. When I finished that, I went down and did 20 weeks MCRD – Marine Corps Recruit Depot – in San Diego, and 20 weeks of radio relay that was put on by Collins [Radio Company]. Oh, it was great.

I'd always ask these dumb questions. They'd show a schematic up there, they'd show a 100k resistor. I'd say, "How do you know that's supposed to be a 100k resistor?" They'd answer. They'd tell me, but I didn't know what they were talking about. But it was fun! It was really great! I learned a lot of jargon about time-domain reflectometry and multiplex. All this terminology. Turned out that terminology got me a job when I got out of the Marine Corps. I didn't know anything about what it meant; it didn't matter. They didn't know what it meant either.

Weaver: Do you speak any other languages than English?

Dabney: No.

Weaver: What would you consider your hobbies?

Dabney: Well, right now I write software with Visual Basic. These are just home programs; recipe programs, bank programs, that kind of stuff. I just write lots of programs. That's what I do now. I didn't really have much in the way of hobbies when I was younger. I liked to roller skate and ice skate. In fact, I learned how to ice skate before I learned how to roller skate. I liked doing that.[21]

Weaver: Let me ask you a few questions about your personal philosophies. What do you consider the driving motivations in your life?

Dabney: Probably being accepted, just being accepted. Just being who I am, or letting it be okay who I am. It didn't always work out very well, but that was really what I wanted.

Weaver: If you could ask another person, living or dead, a question, what question would you ask and of whom would you ask it?

Dabney: That's a tough question! I don't know, there are so many. Probably the one person I have the most respect for is Galileo. I would love to ask him something, and I have no idea what I would ask him. I have no idea.

Weaver: You've achieved a degree of notoriety-

[21] In a separate email after the interview, Dabney wrote: "I loved sailing my 17 ft sailboat. I sailed it very often on Lake Almanor in Plumas County, CA. I also sailed it on nearly every lake in Ferry County, WA. I was looking forward to Clear Lake in Lake County, CA. It takes strength and speed to sail a 17 ft sailboat. I was losing some of both, so I donated it to Hospice Thrift Store here in Clearlake, CA."

Dabney: Yes.

Weaver: -and what has it meant to you? In other words, has it meant living up to some impossible standard?

Dabney: [Laughs.]

Weaver: What do you think? Has the recognition helped or hurt you?

Dabney: It's just an ego trip. It doesn't mean a whole lot. It's not like I invented some kind of magic thing. It's just something I did, and it's amazing that I can get as much attention for it as I'm getting. I'm just blown away by it. I don't know what else to tell you.

Weaver: In other words, what did you believe that you were originally doing at the time that you got into the business? And now with the luxury of hindsight, what do you think you actually achieved?

Dabney: The only thing I achieved was what I set out to do. I set out to do something, and I did it. But I've done that with a lot of things. I've done it with Ampex, where I was supposed to invent a phantastron. I don't know what a phantastron is. I looked it up and I invented a phantastron. Just being able to do something that I want to do and be able to. I'm not sure I understand so much about what you're asking here.

Weaver: At the time that you were involved in the creation of video games, could you imagine the social impact they would have on society around the world?

Dabney: Oh God, no! Oh no. I didn't even think about it. Didn't worry about it. It wasn't even part of my consideration. I wanted to get done what needed to get done. That's all I wanted. I wasn't worried about whether it was going to be successful or anything. I didn't worry about any of that. Yeah sure, it'd be nice to just be successful, but that wasn't my motivation. My motivation was just to get done what it was I wanted to get done. I don't know if that answered your question, but that's the way it was.

Weaver: Here's the last question. Yes, it did answer my question, by the way. How does it make you feel to have contributed to the birth of an industry?

Dabney: Kind of weird. [Laughs.] A lot of people start companies. I know a lot of people start companies. When you start an industry, that's pretty big. [Laughs.] And I take great pride in that, even though that wasn't my purpose.

Weaver: Excellent. Thank you, very good answer! This was really great. That was a great answer!

Dabney: [Laughs.]

[End of interview]

Appendix 1

SYZYGY CO.
ENTERTAINMENT ELECTRONICS DEVELOPMENT
2962 SCOTT BLVD.
SANTA CLARA,
CALIF. 95050
404-247-4825

408

July 10, 1972

244-0780

John A. Britz
Executive Vice-President
Bally Manufacturing Corporation
2640 Belmont Avenue
Chicago, IL 60618

Dear John:

I was pleased to receive the contract and check and would like to thank you for your vote of confidence in my skill as an amusement engineer. I hope that our association can be long and mutually profitable.

It is my objective to deliver games on a soon as possible basis. My projected delivery date for the flipper mock-up is September 1, 1972 with the video game to be finished November 15.

The flipper mock-up is to be a radical departure from a standard four player. It is based on a three world theme in which each world has its own unique scoring and ball action with the ball traveling from world to world through feature opened gates. The progress on this machine would be speeded by the receipt of the drawings and parts we spoke of in June. These were:

1. A set of working drawings of a four player flipper game (Fireball).

2. A list of approximate prime cost of component parts.

3. A list of cost objectives concerning one player, two player, four player, and arcade pieces so that our design objectives can satisfy your profit requirements.

4. A parts kit which Mr. Lally and I spoke briefly of which would contain the basic parts in current production, i.e.

   a. Several thumper bumpers
   b. Several mushroom bumpers
   c. Assorted posts and rubber bumpers
   d. Coin unit assembly
   e. Ball unit count assembly
   f. 00-90 unit assembly

Britz Dep. Ex. No. 2 Id.
Date: 6/25/74
Reporter:

g. Player up unit assembly
h. Four reel score assemblies
i. Replay unit assembly
j. Fifty volt transformer
k. Flipper unit assemblies
l. Score motor assembly
m. Assorted relays
n. Kick out hole assemblies
o. Gate assemblies
p. Two uncut playboards
q. Plunger assembly

There are many parts which we will ultimately need that will be ordered using the appropriate part number when we have the necessary paperwork. The above will be necessary to continue our work at maximum efficiency.

The video game has a hockey theme which has a great amount of two player speed and excitement. The features are: on screen digital scoring, goals, field markings, multidirectional hockey players with sticks, goal tender, puck with computer controlled motion to simulate actual ice characteristics.

I hope that in future travels you or your staff can drop by so that we can produce an optimum project, and get to know one another on a personal basis.

Hope to see you soon.

Sincerely yours,

Nolan K. Bushnell

cdv