Mike Albaugh Interview

Interviewed by: Dag Spicer

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Spicer: I'm Dag Spicer. We're here at the Computer History Museum on November 12th, 2010. We're here with Mike Albaugh, who is an early and important employee at Atari. Welcome today, Mike.

Albaugh: Hi. I might quibble with the important. I've always been what I call a “third guy on the left” kind of guy where there's the picture of pioneering video game designers at Atari and it's, like, you know, it names all of them and then it says, "Well, the third guy on the left might be somebody named Mike Albaugh" because I was there but not in the center.

Spicer: Okay. Well, I think you're being modest but we'll go on. Mike, tell us what it was like to work at Atari in the early days.

Albaugh: Much as it was in the later days without some of the angst, other than the angst of, you know, are we going to go broke before they sell to Warner? But that happened so soon after I joined that I missed out on the inconvenience of spending the results of my stock because I didn't have any. Fascinating, intelligent, driven people. Certain amount of eccentricity and certainly all the stories of people, like Steve Jobs or Nolan Bushnell point out, but super crew, eccentric, talented, multi-talented, usually, small enough operation that everybody did more than one thing.

Spicer: What kind of hours did people put in in those early days?

Albaugh: Would depend where you were in your project. My personal record, at that time, was 36 hours straight for the usual, you know, a review of your project has been scheduled at an arbitrary date by the people in marketing and, you know, these features will be in it.

Spicer: The 2600 was Atari's first blockbuster product. What made it so successful?

Albaugh: I think the combination of the flexibility, which came from its fairly Spartan design. I mean, it's the old ‘form is liberating’ thing and also the way that people discovered things they could do with it. I think also the fact that it was done within a company that did take fun seriously, I have the t-shirt to that effect, meant that there was the curiosity to pursue it. I mean, not to say there were no imaginative people at Fairchild but they were primarily a technology company, not an entertainment company. So Atari was fairly uncommon at the time, being both technology and entertainment.

Spicer: Was it important that these games were available on cartridges? I read somewhere that this was one of the earliest cartridge-based games and that actually promoted its success.

Albaugh: Well, as opposed to what? I mean, before Fairchild Channel F and the Atari 2600, games were single-purpose. Of course, this was an issue we had in coin-op [the coin-operated video game division of Atari] as well, that, you know, to change the game, you bought a whole new thingy, which was, you know, 100 bucks in a consumer device or 800 bucks in a coin-op device. So the notion of having a base unit that you could then change easily, you know? Cartridges weren't competing with cassettes or floppies. They were competing with buying a whole new box to play a new game.

Spicer: Thank you. What part of the 2600 did you work on?

Albaugh: The only thing I had to do with the 2600 was sort of-- so, let's see. For your viewers, I worked in the coin-op division, which this t-shirt representing coin-op, the real Atari, has to do with when corporate was really sort of negating the importance of coin-op, although we were still feeding a lot of content into what would become the consumer division. My connection to the consumer side is via my friend Joe Decuir, who was one of the designers of the 2600 and who, when I was looking for a job, suggested that I try Atari because the folks over in coin-op were looking for someone. So I was the third programmer hired over there. I did kibitz when Joe was debugging the initial 2600 chips involving this kluge board attached to a KIM-1[1] and, by noting the nature of the screw up, where it would work fine if he would poke registers from the keyboard but didn't work when a program ran and so I thought, I bet you have a problem with the access time from chip select on the TIA [Television Interface Adapter], which, in fact, turned out to be the case. They had to do some interesting surgery on the chip to solve the root cause of that but it's my one claim to fame on the 2600.

Spicer: Thank you. Who were some of the superstars at Atari and what did they do?

Albaugh: Well, from the basis of the prima donna t-shirt, you know, there were a lot of people who at least claim to be superstars at Atari.

Spicer: What's the prima donna t-shirt?

Albaugh: Ah, the prima donna t-shirt. At one point in an interview, Ray Kassar, who was the CEO that had been installed by Warner after they bought the company, was quoted as saying that basically dealing with game programmers was like dealing with his, like, underwear designers because he had come from the textile industry and that they were basically just a bunch of high strung prima donnas. So that did not sit well with the crew, so to speak, and a friend of mine and I produced these t-shirts[2] that said, on the front, "Just another high strung prima donna from Atari" and, on the back, had a picture of the sort of classic opera diva, only her spear was a Atari logo as the point, which, of course, would get us in all sorts

[1] The KIM-1 was a single-board computer using the 6502 processor, and was quite popular for this sort of prototyping.

of trademark infringement things. So we sent one to Ray but lots of people were wearing them. He took it with remarkably good humor, possibly because he was in the full glare of the public at the time and didn't much have a choice. But superstars. Ed Logg immediately comes to mind, who was responsible for Asteroids, Centipede, Millipede, Gauntlet, just a huge- I mean, Ed Logg. That's, you know, there's a name that's probably number one. The less publicized superstars, I would have to include Carol Shaw, who was simply the best programmer of the 6502 and probably one of the best programmers period and she worked on, you know, bringing this back to the 2600, she worked on VCS [Video Computer System, a.k.a. Atari 2600] program and, in particular, did the kernels, the tricky bit that actually gets the picture on the screen for a number of games that she didn't fully do the games for.[3] She was the go-to gal for that sort of stuff.

Spicer: What was Nolan Bushnell like as a leader?

Albaugh: Flamboyant, in one word. I mean, I wasn't in levels of the company where I regularly came into contact with Nolan. I did win one argument with him. There were three times in my career at Atari that I threatened to quit if I didn't get my way. I've forgotten what one of them was but one of them- and one was just, like, super technical that nobody needs to put on this tape. But the one was when he thought that Atari football, probably my most famous game, would play perfectly well with joysticks. And I insisted the trackballs were the only rational control for the game because you needed finer control and you needed, I felt, the physicality of the game was an important concept. Nolan was, like, "Well, they're too expensive" and I'm, like, "Well, Jerry Lichac and I..." there's another-- Jerry Lichac was responsible for the design of many unique and very engaging controls at Atari, again, on the coin op side and I know you're more 2600 side. But related to consumer electronics, the three point suspension that he came up with for the trackball for Atari football was copied by virtually every mechanical mouse ever produced. So, until we got optical mice, everybody was using Jerry's idea which he, of course, hadn't bothered to patent. So I threatened to quit if Nolan wouldn't let me put a trackball on Football and they wanted Football. Very small teams at that time, there were, like, three of us working full-time on Football so one of them quitting was a big deal. I got my way.

Spicer: What was it like to work at Atari around 1983, which is the...

Albaugh: The crash.

Spicer: The big video game crash. What was it like to work at Atari in 1983, the year of the big crash in video games?

[3] For example, I believe she did the video kernel for Ed Logg's Othello cart.

Albaugh: Well, the big- I mean, there were multiple crashes. I mean, it's a cyclic market. So maybe the not so recent unpleasantness, to borrow a euphemism from our brothers in the southeast, one side effect was, at the time, I worked in a liaison-ish sort of role between consumer and coin-op so half of my job was sold to Jack Tramiel and his backers. Nobody knew who had the right to lay me off so I made it through that crash. It was the start of a phone list that I maintained for years of people, not just the ones being laid off but the ones staying so people could maintain contact. That's on the web now[4] but I try not to publicize it, since it's supposedly just for those trying to get in touch with others of their like and people emailing me.

Spicer: How important was the infamous Pac-Man port to the 2600?

Albaugh: I think it's overblown. I think it's overblown. I mean, okay, *Gigli* is widely viewed as one of the worst movies ever made, you know, or maybe *Ishtar*, who knows? So you lose a certain amount of money on *Gigli* or *Ishtar* but you don't-- a studio would not have, as Atari did, compound that by producing more copies of the *Gigli* DVD than there existed DVD players in the world or in the foreseeable future. So, you know, was it a not so good cartridge game? Yeah, probably. Was it for that reason that it was an economic problem for Atari? Not really. Was that a big enough economic problem to cause the crash? No freaking way. The crash was basically people were- the metaphor I use is a lot of people in Atari management viewed the business as this stream of silver running along and no one will notice if I dip my cup in. Well, when the market contracted a little, as it does regularly, the stream ran dry and all the accounting crap that had been done to hide various issues unwound. You don't lose $300 million in one quarter.

Spicer: Did you work on any of Atari's personal computers? If so, how would you describe the development process?

Albaugh: Interesting. So, again, technically, my only contribution to the 400/800 was kibitzing with Joe [Decuir] and Jay [Miner] and, by then, some of the other people that were working on them. I did spend a year on, like, an exchange program. Rick Mauer came down to coin-op and worked with Owen Ruben on a game called Space Duel and I went up to consumer and did the point of purchase demo for the 400 and 800 system. I wasn't directly under the management control and pretty much, since I worked for the marketing department not the development group, per se, I used whatever tools I felt like, which was a self-hosted Forth system. There were people doing Pascal stuff, self-hosted on the 800. There were people doing assembly language, cross-assembled on a Tandem or a [DEC] PDP-11/34. There was a remarkable amount of diversity in what you were allowed to use for your development. Even consumer, which I like to think of as more “suit dominated” than coin-op, there was more of a product focus than a

[4] The phone list has since been removed, as there are other ways to find people, and some objected to it being so easily findable. I still try to put folks in contact if they email me.

process focus. If you actually needed to do something to get something done, you could generally get permission to do it. We had a PLATO terminal. I don't know how they snuck that past management but...

Spicer: Do you know if it was connected to anything or what it was used for? The PLATO terminal?

Albaugh: I know that some of the people were addicted to the jet fighter game, which is a remote game so clearly it was connected to a PLATO node somewhere. I mean, CDC was just down the block. Ed Logg had walked up from CDC on his lunch hour one time because the Union Bank of Switzerland accounting package he was working on was almost done and he thought he might do something a little more interesting than that.

Spicer: Why does Atari still have so many fans?

Albaugh: I don't know. I mean, I do, in a sense, because the enthusiasm was infectious. I think we held out longer than most in the suits versus grunts wars. That was a time when you could. There's a time in any technology where it's new and the people working in it are the people who really want to work in it as opposed to what I call the matchbook programmers that became programmers because an ad on the back of a matchbook said you could make good money at it. So there was a personal-- I just don't know the right word for- a personal involvement, maybe? By everyone who worked there or certainly the vast majority of them and I think that it shows.

Spicer: The games themselves seem to have a very long life. There is an active community in Europe, for example, that keeps Atari systems running under emulation and runs old games. So that's quite unique, several decades after...

Albaugh: Well, I mean, come on. You can run 1401 software under emulation, too.

Spicer: That's a little- yes. Not quite as many people do that.

Albaugh: I've been ambivalent about that because I personally, for instance, one of my games that was never released, there is a MAME, that's Multi Arcade Machine Emulator, for any people viewing this who haven't heard of MAME, version of it. It does not work well and I've always been ambiguous about if I actually dove in and tried to find the problem and fix it, would some Warner lawyer come and nail me to the wall for using my knowledge of proprietary intellectual property to do that? So it's an odd feature of our currently intellectual property law.

Spicer: How did video games change in the nearly 25 years you were at Atari?

Albaugh: Basically, the development teams for video games got significantly larger and the money, of course, increased, and the number of people increased. Project management got bigger. When I started, it was two or three people in a core team, three or four people outside that core team developing a game and, in VCS [Video Computer System, a.k.a. Atari 2600], even smaller, one or two people. People did artwork drawing in colored pencils on graph paper. I brought some examples of that. Especially in VCS, you co-evolved the technology in the game play because the technology had limitations that the game play had to fit into and the game play had a desired goal that you had to figure out how to use the technology to get. As the, you know, Moore's Law drove everything cheaper, bigger, faster, that became less important and it got to where any midrange PC was vastly more powerful than, well, the consoles of when I started there or they even- not vastly but equivalent, anyway, to a coin-op game which had, before, had the edge because they could use bleeding edge technology especially built for delivering fast moving video as opposed to PC game video cards that were designed for Lotus pie charts. So because of the greater generality and the embarrassment of riches in the technology, it became much more like film and brought in the film thought processes as well, waterfall process management and lots of people bike shedding[5] the designs.

Spicer: I did have one more question I want to ask you which is did the coin-op division influence the consumer division in terms of technology or marketing or any other dimension?

Albaugh: Well, I mean, there were a lot of consumer ports of coin-operated games. I think I hold the unique distinction of the only coin-op programmer to have two of my games made into Activision VCS cartridges.

Spicer: What are those games?

Albaugh: Drag Race and Boxing. Boxing was never produced as a coin-op game, partially because it was so physically involving that the controls tended to break, even when we had very massive, like, $200 a shot controls. But the game play itself was used in the Activision Boxing cartridge. Not so much on the technical other than, like I say, having lunch with Joe and Jay. I think I made enough of a pain in the rear of myself to make sure that the Atari 800 had upper and lower case in its text modes. Management felt that, since the Apple II didn't have lower case, we didn't have to, either. Let's see. I provided the display

[5] The term "bikeshedding" is described in detail at bikeshed.com. It comes from the book "Parkinson's Law" by C. Northcote Parkinson. See also: http://en.wikipedia.org/wiki/Parkinson%27s_Law_of_Triviality. In a nutshell, people tend to argue at great length about trivial things, because they can "display list interrupter." I believe the "er" is just me filling vocally while I figure out what to say next. The term is "display list interrupt," and I got the notion, along with the notion of "data chaining" from IBM 360 I/O channels. Both were incorporated into the Atari800 ANTIC chip. It may be unwise to publically mention that, as various S/360 patents were probably still current at the time.

list interrupt, like, I goaded Joe and Jay into the display list interrupt, which is kind of a neat feature of the 400/800. A lot of things we didn't influence them on. I wish I had been able to prevail on packet numbering on the SIO but that's pretty esoteric.[6] We did talk. Contrary to some of the folklore, there was more communication than management might have wanted between consumer and coin-op at various times. Sometimes we were in the same building; sometimes we were deliberately kept apart.

Spicer: Okay. Terrific. We're done. Thanks for sharing your thoughts with us today.

END OF INTERVIEW

[6] In coin-op, we had been using the Octopus protocols from Lawrence Livermore Labs. These had reduced "packet number" to a single bit, but that still allowed recovery from lost acknowledgments. With that in mind, I tried to convince the folks designing Atari800s SIO [Serial Input Output] protocol to include at least a single bit. They refused, and it indeed became a problem later, manifesting as repeated character strings in printouts. USB wisely adopted the single-bit packet number.

