

Dubois and McNamara (D&M)

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Compucolour II

Dubois & McNamara (D&M) started in 1979 when I visited Jeff, a friend from my earlier apprenticeship days. At the time I was a fitter and turner by trade (machinist, I worked a lathe or mill in manufacturing). His brother, John, had just bought a Compucolour II, one of the first home computers you could buy in Australia. The Compucolour was a very expensive computer, it cost just over \$2,000, back then a new Holden would set you back about \$2,400. For that much John got a fully enclosed computer (like the Tandy Model 3 or 4, but with the keyboard separate), it had a colour monitor, with the system displaying 16 colours, the system had 2 floppy drives fitted on the right hand side of the case, he had brought the deluxe model, which had 32 Kb of memory. It ran an Intel 8080 processor and had a crude version of basic built in. It was the first home computer I had seen, and I was hooked, I spent the next 8 hours poring over the manual and writing my first basic program, his father finally threw me out at 4 am.

It had a funny file system, when you name a program it put a .bas extension (nothing wrong with that) but it also added a numeric value as well so if you saved a program called PROG1 it would be saved as PROG1.BAS.001 if you saved it again it would be PROG1.BAS.002 it didn't overwrite the old one. It kept all files on the disk in sequential order so when you wanted to delete say the first one it literally juggled all the files down the disk. To minimise the time this took it used all its memory, including its video memory so for 30 to 40 (or longer) seconds the screen would flash all sorts of colours and symbols. Google "Compucolour II" and there is a short "file deletion" video (https://www.youtube.com/watch?v=_RNI5C_4ZGY).

I was a complete novice, had never seen or written a program before but I thought there must be a better way. The manual actually said "to save time, save your file to a new floppy and then format your original disk (which only took a few seconds). I thought the machine had twin 8 inch drives but

google tells me it had 5 ¼ inch drives. It was only 40 years ago I must be losing it.

Anyway, I was hooked, I had to have a computer. So the next day I went shopping, Dick Smith sold a machine called the Sorcerer, a Z80 based machine, which at the time meant nothing to me, but it was just out of my price range, and that was before you added a TV (or monitor) and tape recorder (for program storage). I realised today that every place has 3 or 4 TVs scattered through the house with another 3 or 4 TV gathering dust in a cupboard, but back then you had one TV and four channels which all went off air around midnight. I looked at the Commodore Pet, a few S100 based systems (which technically scared me) and of course the Apple which was way out of my price range.

TRS-80 Model 1 Level 1

I then went to Tandy, and there was the TRS-80 Model One Level One, at \$699.00, complete with Monitor and tape recorder. The model one had 4 K of memory (expandable to 16 K for about \$299 – I later bought mine from Dick Smith for \$119) it had a very basic Basic interpreter built in – also 4 K in size, you could buy a Level 2 basic (12 K) which was light years ahead of the 4 K one for \$399 or you could buy a Level Two machine for \$1199, I just couldn't afford \$1199. Buying the Level One was probably going to get me divorced, buying a Level Two would also get me bruises.

I can still remember the salesman, “this is a very powerful and sophisticated machine, buy the Level One and after a year or so if you want more power you can upgrade”, he had already determined that here was a customer spending more money than he really had and if he pitched the Level Two it was no sale.

Two weeks later I was lugging my machine back to Tandy to get it upgraded to Level Two (\$699 plus \$399 – I should have brought the \$1199

machine, as I still only had 4 K of RAM, enough while I was still just playing with basic.

Into the world of machine code.

Around this time (1978) Space Invaders invaded Australia (and the rest of the planet). I hate to think of how many 20 cent pieces I fed into those machines, well Tandy released a Space Invader game. I was very disappointed, the original game had 5 rows of invaders and 11 columns, this game had 5 rows and only 8 columns. I could change that, I brought the game, I would list it and modify the code (remember I was only a month into computers at this stage – everything was literally Basic for me). I actually went back to a Tandy store and asked how I could list the program, he explained to me that the program was in machine code and not Basic. To do machine code you needed an editor assembler. So I brought Tandy's Editor Assembler, which meant I needed 16 K, which I brought from Dick Smith for \$119 ($\$699 + \$399 + \$119 = \1217), I now had a Level Two machine plus some bruises, a Level Two machine would have set me back \$1199 originally so I was down \$18 and a warranty as I had opened my machine.

I obviously still couldn't list my space invader program, I was so ignorant back then, so I started learning assembler so I could write my space invader program, which meant you had to learn your machine, that is, how to connect to your keyboard, tape player, where is your video mapped, it meant buying books, many books, you couldn't google "how do I do this".

A year in and I was getting quite good at programming but still only playing around, but the wife was happy as I wasn't spending any money, little did she know that in a dark corner of my mind was a longing for an expansion interface unit (only \$499), two floppy drives (\$299 each – non Tandy) plus 32K more RAM (\$238 – Dick Smith). The Compucolour II all of a sudden wasn't looking so expensive.

My first programs.

I had a friend, Rick, who also loved programming, but he wrote in basic and used a compiler. The compiler did an amazing job of speeding up basic programs, the biggest problem with interpreter basic is its speed (or lack of), it's why you can't write arcade style games in basic.

Anyway, Rick was a student and poorer than me and owned a TRS-80 model one level two, when I visited him this time, he had an expansion interface unit, full of RAM, with 2 floppy drives attached, WOW! I said, "How did you get these", now Rick was a pretty honest guy so I dismissed the possibility of him throwing a brick through a Tandy store window, which was how I was thinking of getting them. He had written a couple of games and taken them to Tandy and swapped them for merchandise. "Sorry Rick, can't talk, I'm off home to write some games".

The first program I ever wrote was "Gun Fighter", a two-player game where you fired at each other. I swapped this game with Tandy for an expansion interface full of RAM, 2 floppy drives and a printer plotter that had four little pens in it (black, red, green and blue). My main use of a printer was for listing my source code. Being self trained I had many bad habits, one was I rarely put in comments and made use of hard copy listings. I rarely made use of previous code and every game was a complete write from start to beginning. (Other friends who did programming would come round and print their code as well.)

I already had a printer, an old converted tele-type machine it printed like a typewriter and when the carriage returned with a clunk for a new line it would move the printer about 1/16 of an inch, I nailed a board to the edge of the desk to stop it walking off the edge. It had a little RS232 circuit board that drove the printer, it ran at 110 baud, the machine used 6 bits for its characters (no lowercase) plus a stop bit, so 110/7, about 16 characters

per second. So, an average page of 60 characters by 50 lines would print in just over 3 minutes. If you owned a printer you were a real power user back then. Hard drives, if you were to say you had a hard drive you might as well have the word “Bullshitter” tattooed across your forehead.

I now had a full system and wanted to make a living out of programming, but Tandy didn't want to part with money for games and offered just a few cents per game on a commission basis. I decided to write, manufacture and market them, which I did.

Tricia McNamara

And by the way the Mrs who was so against computers until we started to make a good living of them is McNamara in Dubois and McNamara, she never did any programming and wouldn't even buy a device if it had more than two buttons on it, too confusing, but if not for her D&M wouldn't exist.

I wrote four games based on current popular arcade games. I cannot remember the order of the games that I wrote but I think they were Ghost Hunter, Hoppy, Centipede Attack and Penguin. I'm almost certain of the first three but I'm not sure if Penguin was the fourth. Anyway, we manufactured these and after about 2 months we had sold about 20 copies.

A quick note about Centipede Attack. As every game I wrote was a copy of an arcade game I often wondered why the manufacturers never complained. Obviously, the code was Z80 and would never have infringed on theirs but yet! Anyway, Atari sent me a letter and said that they had a copyright on the word “Centipede” and I couldn't use it. I don't know how you copyright an animal's name, but I wasn't taking on Atari and I changed the name to Insect Frenzy.

Now I had already dealt with Tandy having sold the rights of my first two games for merchandise and when I approached them with these new ones

they weren't even interested. I think out of spite as they didn't even want to look at them. Because now I was making and marketing them and not selling the game directly to them.

Dick Smith

Obviously, the people to approach next would be Dick Smith who sold a computer called a System 80, a copy of the TRS80 although it looked nothing like the TRS80. I already had dealt with them on a hardware matter. I along with 3 other colleagues had developed a hi-res add on board for the TRS80 (System 80). It was actually a programmable character generator, but I had written a program that allowed you to set a small portion of the screen aside where you could draw to it as if every pixel could be turned on or off. Now as you would know the TRS80 had a screen of 64 characters wide by 16 lines for 1024 characters. Now each of these characters is defined by a byte, the ASCII set 0 to 6 bits for 128 characters the graphics set 2 blocks wide by 3 blocks high used another 64 characters. Each of these blocks is 3 pixels by 4 pixels, so the screen resolution is 384 by 192.

Now why would Dick Smith want to access all of these pixels? This was the beginning of the age of computers going into schools. Now Apple had been sneaky (probably with money) and had convinced those in the government that they needed a computer that could individually access 256 x 192 pixels, which ruled out everyone else. Now schools were only allowed to buy computers that met this standard, that is, Apples. Dick Smith wanted to get his System 80 into the schools but couldn't. It's a problem that Dick Smith thought we could solve, but our board didn't. If he had relayed this data to us, we could have solved it for him, but he didn't.

Anyway, I approached their head purchasing officer, Cary Larry (real name) about buying the games and got the Tandy treatment. He said they preferred to buy all their games from Taiwan, and they had enough (which

was a lie as not one quality program came from Taiwan) and like Tandy he didn't even want to look at them. It was very depressing.

Now, Dick Smith, as well as having many stores of their own, sold franchises to other stores for a selected range of Dick Smith products one of these being Computers. Tricia suggested ringing Dick Smith and getting a list of these stores and contacting them. I said it probably wasn't a good idea for me to ring Cary Larry as I believed he didn't like me and probably wouldn't do it. So, Tricia rang and was put through to Jim Rowe who was second only to Dick Smith. He asked why she wanted a list of franchise stores and she explained about our range of software. He said Dick Smith liked to supply all computer products to these stores and suggested we show them to him. She said "sure, when". He said he was free that afternoon, could we come in. **COULD WE!**

We showed him the games, which he loved (or at least thought he could make money with them), now came price, we marketed these in a plastic bag with a header stapled to the top of the bag so you could hang them on a shelf or wall for \$19.95, any shop that brought these got 30% off or got them for \$13.95 (they only cost us about 0.60 cents in material). Jim said that wasn't good enough for Dick Smith, they would need 50% and their initial order would be 200 of each game, would that be OK. I kept thinking $4 \times 200 \times 10 = \$8,000$ Yippy-Yi-Ya but we were negotiating price so I put my sad face on and said, "I suppose so, if that's the best you can do."

He then called in Cary Larry and introduced us to him (he didn't know I had dealt with him before – the hi-res dealings were with Dick Smith and Cary Larry). He told Cary that we had some games that they were going to buy. He told Cary to coordinate with us and get the artwork department to knock up Dick Smith artwork for the packaging so they would look better on Dick Smith walls. Cary just glared at me, as he believed I had gone behind his back, which I had, but he was being an idiot or a dick head or both. If I thought, he disliked me before I knew now for sure. We never had a good working relationship but fortunately he changed departments and a new

person Paul Beaver took his place and I got on swimmingly with Paul. This was probably due to the money I made Dick Smith; in the VZ200 / VZ300 hay days I placed 3rd on a list of all suppliers (not just computers) to Dick Smith, in dollar terms.

San Francisco

1982 rolled around and we were doing very well. I had brought two high speed tape copies which cut the manufacturing time down to about 30 seconds a tape. We employed a Uni student to do all our manufacturing. We decided to go to America (San Francisco) to try and boost sales. Everything we did in America, which was advertising in Micro 80 and selling games by mail order. All of this obviously could have been done from Australia, but the truth was we wanted to go to America. We spent 6 months in San Francisco. Made a contact who convinced me to come back in 1983 and work for him in Michigan. He owned a Tandy store in a small town and as was the practice back then would buy the basic Model III machine, add aftermarket drives and RAM and sell them from his other store.

I spent the first 6 months of 1983, putting Model III together and exploring the IBM PC which had come out a year earlier and we started doing the same with them. It was a fun year but little programming was done.

A game normally took me about one to two weeks with about 60 to 80 hours of programming. I spent more hours researching and playing the games I wanted to copy.

VZ-200

I returned to Australia in May of 1983 (this date was determined by our first child being born in July of that year) and went straight to Dick Smith as I

had written a couple of games and I wanted them to place orders, which they did.

I then went and visited Rick, my old programming friend, to see what he was up to. He was excited to see me and said “come on up, I’ve a new computer to show you” the new computer was the VZ-200 (it had the European Laser markings on it)

Dick Smith was thinking of selling this new computer and had given one to Rick, as Rick did sell games to Dick Smith, Martian Patrol, being one of his. But he only sold 2 or 3, while I sold over a dozen to them and they never even mentioned the new machine to me.

Rick said he was interested to play with it but as he wrote in basic and used a TRS80 specific compiler he could not write for it. I asked if I could borrow it, he said sure as he had no further use for it.

Unfortunately, it came with no documentation. I took it home and disassembled the ROM, I poured over the listing and worked out where the video was mapped, where the keyboard was mapped and how to generate sound. As both machines were Z80 based, once I understood the IO difference between the TRS80 and the VZ80 it was easy to modify my games.

Next week I went down to Dick Smith and had a meeting with Cary Larry and Paul Beaver. I asked them if any new computers were coming out. Anyone would have thought I was talking about some important military secret; they didn’t really want to tell me. I put them out of their misery and told them that Rick had lent me his machine and then I said I had 6 programs for it, were they interested.

Paul Beaver was very interested, Cary Larry didn’t like the fact that I had once again gone behind his back, or at least that is how he saw it.

In '83 I retired my trusty old model 1 and upgraded to a Model III, I wrote all the games on those two machines. I built a little transfer box and program to transfer data between the Model III and a VZ200/300. I would write the code on the Model III then transfer it to a VZ200 to check it running. The transfer was a very small program that loaded in a few seconds, the transfer was almost instant.

I wrote an Editor Assembler for the VZ200/VZ300 in 1984/85 but didn't use it to write any games on, I stuck to my trusty old Model III. I wrote the editor assembler along with the Word Processor that was released as a ROM Pack as well as tape merely to attempt a more complex program than games.

I had many years of fun playing with the VZ machines. I built a network of 5 machines connected on a 100-metre cable. I wrote a networking program where each machine could access the drives on a Model III (which was the host). All machines could read/write/print to the Model III.

Death of the VZ

By the early '90s the IBM clones were taking the world by storm and rapidly falling prices of IBM (or copies) machines along with their enormous greater power meant the VZ300 was losing its market share. Dick Smith was still selling over 100,000 machines a year. The Taiwan company told DS that they were going to stop production of the VZ and switch to IBM clones. DS offered to increase its order to 200,000 a year but the factory said even that wasn't enough. DS stopped selling VZ and within 12 months the software sales dried up as well, and I was out of business.

My One Regret

In '83 when in America, I could see the writing on the wall. Games were rapidly changing, people were no longer satisfied with bad graphics and sound any more, they wanted more definition and colour. I started playing with a Commodore C64 (sin of sins – it wasn't a Z80, it was a 6510).

I returned from the USA fully intent on learning the new machine and developing games for the C64 but then I visited Rick and found a VZ200. My decision to stay with the VZ200 over changing to the C64 was based on a combination of three factors. One, it was Z80 based machine (something that I knew like the back of my hand), two, I had a good reliable buyer for my product (DS my only buyer) and three, I was lazy (the C-64 route meant a lot of work).

Would I have been better off writing for the C-64? The answer for that exists only in an alternate universe, then again, if I hadn't visited Jeff that night and bumped into a Compucolour II I might never have written a game.