

CHAPTER 1

The Human Years

My story didn't start in the cold sterile environment of a body mechanic's studio or doctor's office. It started while I was sitting in a dark basement on the west side of Detroit, Michigan, in the bedroom of my childhood home. I am the oldest of three boys. My father worked the third shift as a technician for the auto industry, and my mother cleaned houses during the day. There was a rule in my house: "Nobody in, nobody out when your dad's asleep and Mom's not home," which left only my younger brothers as companions most of the time. The four-year age difference was too great a chasm to bridge in my youth, so I spent most of my time alone. This living arrangement provided a place where I was left unsupervised to explore and satisfy my insatiable curiosity by whatever means I chose. If I wanted to understand electricity, I would take apart a piece of electronics, look at how all the pieces fit together, and then (most of the time) put it back together.

From a very young age my understanding was that the world is nothing more than a series of questions or puzzles and that knowledge was the ultimate power. If you looked behind the mundane outer package, you got to really see what made it function and what made it run. The relentless pursuit of knowledge became an obsession; I always wanted to understand the inner workings of everything I saw. Gears, cogs, transistors, wires, capacitors—it didn't matter if it was electric or mechanical; I would dismantle, inspect, and then reassemble almost anything I could, always looking for the "how" and "why."

My curiosity got me into more than my share of issues. I always knew what I was getting for birthdays and Christmas; there was no safe hiding spot. Anything left out in the open could be subject to deconstruction to satisfy my need to know how it worked. The social etiquette of respecting other people's property (especially in our home) was something I didn't get a good understanding of until much later in life. I was very socially awkward and clumsy, and making friends was not something that came easy for me. I was always the shy kid in the corner, not saying much, but I was taking in everything happening around me. I learned the fundamentals of social engineering

before I even knew it had a name. I was too smart for my own good, often coming across as arrogant and cocky in my responses. With very little sense of self, I could very easily offend anyone with whom I came into contact. With my limited parental supervision, I learned that negative attention was better than no attention at all. As a result of my environment, words, and actions, I was labeled the “bad kid,” a “bad influence,” and a “troublemaker.” These labels have followed me throughout my life. It eventually became easier to live my life as the person the world apparently wanted me to be.

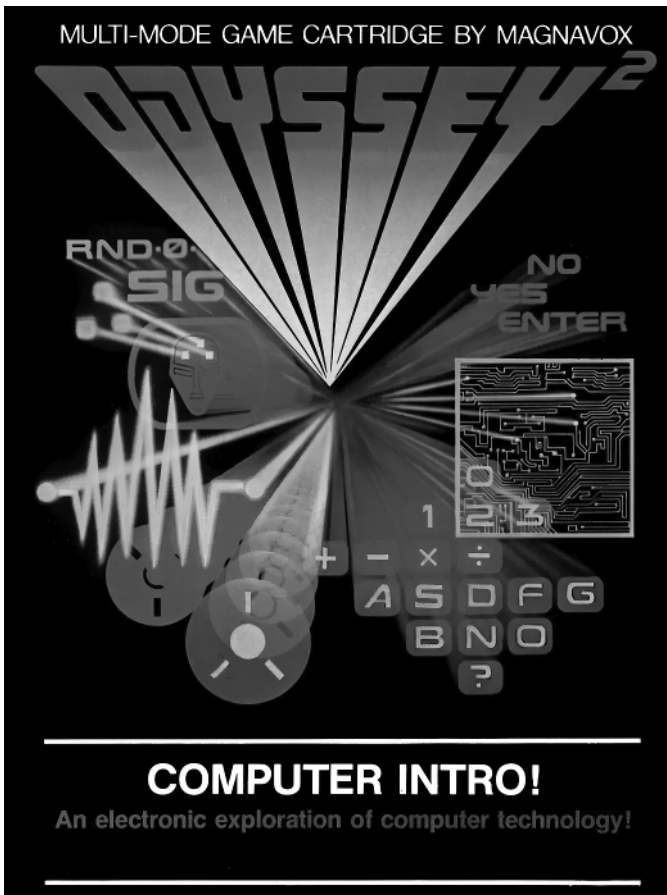
The Odyssey 2

My introduction to technology resulted from my father being one of those types of people who gets all the latest gadgets. I remember my first “computer” was a Magnavox Odyssey 2. This was a set-top system that was closer aligned to an entertainment/gaming system than what would be recognized as a computer today. The only noticeable similarity was the membrane-style keyboard as part of the console. Like any young child, I loved playing video games and spent as much time as my parents would allow parked in front of the TV, joystick in hand.



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All my tinkering, disassembling, and reassembling, all that functional understanding of how parts fit together was to be the foundation from which



Magnavox *Computer* (1979) / <https://odyssey2.info/db/game/computer-intro-12/> / Last accessed on July 12, 2024

my new reality was about to be born. I don't remember the day or even the exact year my father came home with a new game cartridge. This game, unbeknown to me at the time, would be the direction my career, my life, and, eventually, my physical body would follow. This game was different; there were no pictures of space aliens or athletes on the cover. This was a game that came with a manual that was more than 103 pages long; it looked like schoolwork, and I wanted nothing to do with it. The game actually sat for months on a shelf untouched and unplayed. The game was Magnavox's *Computer Intro*.

I don't know how or why the manual had come to be on the floor that day or why it was open to page 1, but after quickly skimming the first three paragraphs, I was immediately stunned.

Computer Intro is not for everyone—but if you’re up for a rewarding mental challenge, it is a fascinating entry point into a complex and highly technical subject.

The cartridge turns your *Odyssey 2* into a very special kind of computer. It won’t balance your checkbook or do your income tax or plot the course of a spaceship to Mars, but it will give you some idea of how those computers do their work. You will begin to understand how a computer “thinks” and even begin to think like a computer “thinks.”

I didn’t care about schoolwork, but I was absolutely interested in the idea of plotting a spaceship and going to Mars. This was all it took for me to start flipping through the rest of the manual. This was my first introduction to binary, hex, coding, compilers, and debuggers. This was where I first learned about registers, routines, and subroutines, and how information flows through a basic computer. I studied that manual and did every exercise available, as well as wrote some of my first script/program there. The capabilities were extremely limited but served the purpose of providing me with that initial hunger for the secrets of technology.

The Commodore 64

My educational years were not the happy memories that I hear people reminiscing about when discussing childhood stories. I was the overweight nerd who was reading comic books and making campaigns for *Dungeons & Dragons*. I was failing fourth grade, and my parents decided to have me tested for any learning disabilities that might be causing my issues. What we discovered was completely the opposite—I didn’t have a learning disability; I had a genius IQ. The work was not challenging enough for me to want to do it, and I was too stubborn to be reasoned with. This revelation prompted my parents to enroll me in a private school for gifted children. The curriculum was not structured like standard elementary school. The traditional structure of all students learning the same thing at the same time was replaced with a tailored education plan for each student that prioritized areas of gifted interest. My education plan was heavily centered around mathematics and science.

It was when I was enrolled in this school that working on the Commodore 64 was added to my education plan. I saw the possibilities of what a real computer was capable of. No longer limited to the base functions contained in a single system cartridge, at the time, the possibilities seemed limitless. Using the skills I’d learned from the *Odyssey*, I started to explore the capabilities of this new device. This was long before the time of the Internet or anything like the data-sharing capabilities available today. There was no easy way to get software for your computer; there was no download option. Computers and

software were sold at major retailers and small brick-and-mortar computer stores. The way most people got access to new information was through magazines distributed via mail. It is to one of these magazines that I credit my first “hack.” I don’t remember which magazine it was, but it provided code to build a Frogger-style video game. I remember typing what I thought was the exact same thing that was in the magazine. I only had a basic understanding of debugging at the time, and the compile would fail repeatedly. After numerous attempts, it finally executed; however, I still had errors in the code. I just didn’t realize it yet.

To my surprise, the main character in the game would not die. I had, through no intention of my own, coded a “Go mode.” This is the moment that things started to click for me. This is when the direct correlation between the code in the back and what happens on the screen made sense. Up to this point, I was just doing a copy/paste and not really thinking about what I was typing. This was to be a defining point in my life: I would spend the next 30 years trying to duplicate this event in some way, shape, or form.

Newb Before It Was a Thing

After three years in an isolated private school, I was sent back to the public education system with fewer social skills than I had when I had left and the unfortunate knowledge that I was probably smarter than most of the people in my class, instructors included. I vividly remember walking into junior high school and feeling completely lost and terrified. I had no personal connections to any of the other students who had been nurtured through the last six years of school together. My awkward personality and lack of interpretation of social queues made acquiring friends almost impossible. I don’t think I spoke to anyone other than teachers (and maybe one or two students) for the first two months of seventh grade.

I never selected any social group to be a part of; in my case, the clique selected me. I was never the athletic type, and the idea of team sports never interested me. Student government meant standing up in front of people and talking. I was the shy guy, so no, that wasn’t my scene either. I was relegated to the social catchall for anyone who didn’t fit into any of the other social groups—I was dubbed a “burnout.” This was a general reference to a subculture that was identifiable by a distinctive style, attitude, and behavior. Generally, these would be the students who refused to conform to the conventional student routine. Long hair, ripped jeans, and music T-shirts. One of the common components of this group was the use of drugs and alcohol to bolster their rebellious appearance. I was the only one within in my group who was actively experimenting with different substances and still maintaining a 3.75

grade point average. This was the persona I would keep all the way through high school.

From the Commodore, it was a Packard Bell i286, Packard Bell i386, i386 DX2 (with the floating decimal point for higher math function), and every iteration of a computer from then on.

High school introduced me to the world of industrial drafting and the modernization of drawing with computer-aided drafting (CAD). I was convinced that my future career would be as a draftsman, so much so that I enrolled in the school's vocational CAD training program. This was a three-year program that would provide me all the base education needed to transfer to a college and continue toward a degree in industrial drafting. It was in this classroom, midway through my second year, that I completed my first network hack.

The individual CAD terminals were assigned on the first day, and after logging in for the first time, I found a mapped folder connecting to the instructor's system, as well as a connection to the classroom's shared plotter. The daily workflow would be to connect to the instructor's system, retrieve the daily assignment, work until class ended, and then save the file back to the original location for grading.

We talk about hacking and data breaches in terms that are normalized today, but remember, there were no laws or regulations regarding unauthorized computer access until 1986. The ideas and methodologies about networking at this time were reserved for businesses and educational institutions. Additionally, the networks in most cases were air-gapped to the rooms they were in. There were home PCs, but at the time, most were stand-alone. America Online (AOL), one of the first consumer online services that introduced the world to networks, didn't come onto the scene until 1991.

I had no real understanding of networks at the time, but I was smart enough to realize that the naming conventions for all of the drafting terminals followed a pattern. I was also able to see that the instructor's system was called out by name. I keep addressing the differences in the overall knowledge and understanding of basic cyber hygiene because it was a different time, and these types of situations would never happen in today's modern, connected world. This was when Windows 3.1 for workgroups was the current graphical user interface (GUI) application. For anyone too young to remember, this was when the Disk Operating System (DOS) was the actual operating system and Windows ran as a graphical user overlay on top of DOS. This was even before the domination of the Transmission Control Protocol/Internet Protocol (TCP/IP) protocol as the main networking protocol. By default, the only options for network communication protocols then were Internet Packet Exchange/Sequenced Packet Exchange (IPX/SPX) and NetBIOS Extended User Interface (NetBEUI)—two protocols that have been essentially removed from modern-day use due to security concerns and better options. The ability to add TCP/IP was available as a separate installation due to its minimal use at the time.

Being an ever-curious person, when I was not working on schoolwork, I was exploring everything I could click on. This was before the days of Windows Explorer, and we used a utility called File Manager to facilitate the back-and-forth file operations. I was exploring the pull-down menus at the top of the window, and noticed something interesting under the Disk menu. There was an option called Connect Network Drive. I didn't know exactly what this may get me, but based on the name, I had a hunch. After clicking, I was greeted by a dialog box with a list of all the computers in the lab, and the instructor's was already highlighted. After I expanded the instructor's host, I saw not only the names of the directories I was used to seeing (individual storage folder, location to send completed work, etc.), there was also a folder called tests and one called exams. There was no additional security applied to folders that students should have been prevented from accessing. I opened the folders and was presented with all of the instructors' files, including tests and answer sheets. Knowing this was not something I was supposed to be seeing, I quickly copied every test and exam for the entire curriculum. I may not have been one of the popular crowd, but I was ambitious enough to make a good side hustle selling tests for the next year and a half.

Windows into the Corporate World

My first legitimate job in the industry came about just as Windows 3.11 for DOS was being replaced with Windows 95. I started my career as a design/detailer draftsman at a company that built quality control gauges for the automotive industry. At this point, I had every intention of being a design engineer for the rest of my professional life. Due to the limited computer knowledge that existed at that time, I was asked to move to a split position where I would assist the IT administrator. One of the benefits of this arrangement was that I was being taught the skills to do IT administration for free.

There, I was taught how to take the original programming I had done with the Odyssey 2, what I had learned about registers and routines, and apply it all to Windows. I eventually coded full applications that would programmatically draw complete plans for standard gauges with minimal inputs of data. I found that I enjoyed programming and doing IT tickets more than I liked drafting. I couldn't understand how the concepts around computers and networks seemed to just click for me, whereas I had been taking drafting classes since eighth grade, and I was making what I considered to be stupid mistakes when I was doing any design work. It was during this time that I began to realize that my plans for the future may not be what I originally thought they would be.

I eventually decided to abandon my dreams of designing the next automotive engine or suspension bridge, transferred full-time to the IT department, and started trying to learn everything I could about this new world I had decided I was to be a part of. As I said previously, I was fortunate to get into administration just as the Windows 95 upgrades were commencing and was able to be part of that process, learning all the way. I learned most of my fundamentals of technology during my time in that first IT position.

A Hacker Is Born

I was sitting in the office I shared with the current IT admin when I watched over his shoulder as he authenticated to the Windows NT 3.5 primary domain controller: “Detroit.” (This was long before forcing people to use complex passwords was a thing.) I had just gotten my first admin password, and the hacker in me was awakened. I waited until he left for the day and searched that server for anything and everything it had to hide. Once I had the admin credential, I learned how to use the network to reach out and compromise workstations on the local area network (LAN). Everything I was being taught from an administrative perspective had an inverse application that I could leverage. The puzzle just got exponentially larger, but so did my ability to solve it. Hacking or just bypassing restrictions became a religion for me. It didn’t matter what was on the other side of the password, door, lock, or whatever was restricting me. It was the restriction itself that became my obsession.

I have worked with UNIX/Linux, DOS, OS/2 Warp, Mac, mainframes, Novell, and Windows. I have vivid memories of working on a Prime Lundy mainframe with a light pen. I have been involved for the entire computer revolution, with my fingers in every OS, application, or process I could get access to. I worked for corporations that built full automotive assembly lines, did email administration for one of the big three auto makers, and even did day-labor IT work for a small mom-and-pop store. This variety forced me to become very good at troubleshooting and learning to think quickly on my feet and outside the box. The variety of incidents I was forced to address gave me exposure to technologies and applications at a much larger scale than otherwise possible. Just like the original training I received, these skills were multipurpose; resolving trouble tickets was just the reverse order of what caused the issue in the first place. All I had to do was remember the steps to correct the problem and reverse them to create a problem of my own.

I spent more time than I care to admit on bulletin boards, in chat rooms, and eventually on the Darknet. I would check sites like The Hacker News like a stockbroker would watch the ticker tape. I would try any new technique

that I found and, at one point, may or may not have hacked every Wi-Fi router within reach of my home. I was rarely the malicious hacker; I was never the guy who compromised something and then immediately used it against my target unless there was a specific reason. For me, it was always a challenge between the security controls in place. I looked at it like a personal competition between the restriction and me. I am the type of hacker who may leave a file on your home computer suggesting you change the default password on your router.

A Life Divided

My interests and career choice kept me living in two very different worlds—hacking and physical compromise became a large part of my life. It wasn't just my obsession with breaking into things; it was the whole criminal lifestyle that appealed to me. There was power through intimidation and fear, and all I had to do to get it was look and act the part.

I started the transformation of my body when I got my first tattoo at 15 years old. The body modification subculture appealed to me; there was something to the idea of taking control of your appearance and making a permanent statement of personal expression. I remember the marketing slogan from the first tattoo shop I ever visited: "A tattoo is permanent proof of temporary insanity." One tattoo led to another until I now say I have only one single tattoo, and it starts at my neck and goes to the top of my feet. Looking back, I can see now how this was all just a survival technique to try to protect myself from a world I didn't yet understand.

At the time, I was working nights as a tattoo and body piercing apprentice for a small shop on the west side of Detroit. The two shop owners were my first introduction to motorcycle clubs (MCs). They were both full members of a local group and explained the lifestyle as we sat in the shop waiting for clients. Eventually, I prospected for and joined one of these groups. At one point, I was working for a major human resource/payroll company as a systems architect and was an active "nomad" of one of the Detroit area MCs. The fact I was arriving at work on my Harley and hanging my club colors on the hook in my cubicle should have been a warning to management, but no one ever asked about my affiliation or the security threat it may pose. The puzzle was always there, being that close to information I was not supposed to see. I can say I honestly never compromised any client of that organization in any way. I will neither confirm nor deny the rumor of my knowledge of what the executives of said organization made as bonuses that year. After reading this, maybe we will see a digital forensics/incident response (DF/IR) 25 years later.

I danced a very fine line by keeping my day job and after-hours activities separate. The club gave me a sense of belonging, friendship, brotherhood, and acceptance that I had never known.

Flesh Is Stronger Than Steel

I don't remember how old I was when I saw the 1970 movie *A Man Called Horse* with my father. There was no way for him to have known that a scene from that movie would be forever seared into my brain. The movie is a Western set in the pioneer days: a man is captured by a local Native American tribe. During his captivity, he learns their ways and is eventually given the chance to be a warrior for the tribe. The ritual was based on the sacred Sioux Sun Dance, a ceremony meant to give thanks and self-sacrifice for the good of the tribe. The chosen had their chests pierced, and pegs of wood or bone were inserted and attached to ropes. The culmination of the ritual was the rest of the tribe lifting the chosen into the air, where they would hang until the skin gave way or they passed out. At the time, I knew this was a movie and that this actor was not actually hanging by the skin of his chest, but I was intrigued that this was a real thing for the Sioux. Instead of being repulsed, I was fascinated.

I remained fascinated for years, including after I had joined the motorcycle club. Club life is not like it looks on TV or the movies—most of the time it's just living a normal nine to five. Depending on the size of club, there can be chapters in other states or even countries, so it can be very difficult to know every member personally. I started hearing about a brother from a different chapter that was doing flesh hook suspensions and was part of a sideshow group. Not only was he doing suspensions, he was eating light bulbs, hammering nails up into his skull through his nose, etc. When we finally met in person, it was like we had known each other all our lives. I explained that I had been wanting to do a suspension since I was a kid. Our friendship was sealed after that. The fact that I saw it as more of a spiritual thing, and I was not just looking for attention, also helped.

There was a big party taking place at a different club, and my associate was hired to help provide entertainment. He called and asked me if I wanted to come and “hang around” for a while. I had talked about doing a suspension for decades, and I was staring at the opportunity. Almost instantly, I responded with a resounding yes. It was time to put up or shut up.

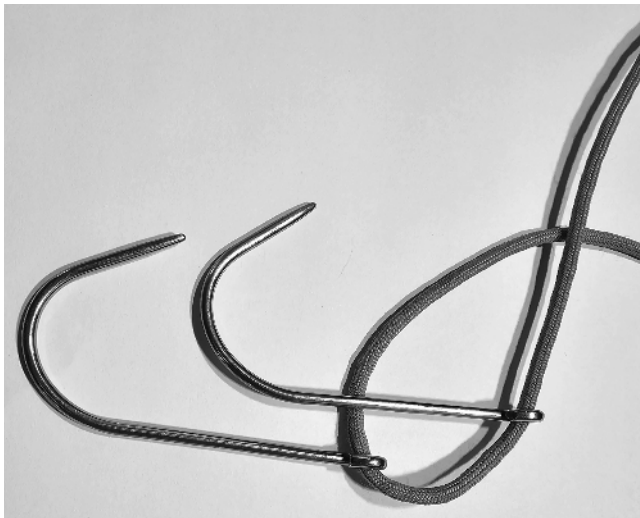
I had talked the talk; now I had to start taking into consideration that I was more than 250 pounds at the time—could I walk the walk? I started doing research on the human skin just to know what I was up against. I learned that the skin that I looked at as being weak and prone to cuts and bruises is actually far stronger than I would have ever believed. Depending on the location on the body, the skin's tensile strength is equivalent to 14.25 to 72.5 pounds per square inch. I discussed my weight concerns with my brother Rooster, and he explained that the gauge of the hooks we used would determine how

much weight could be suspended. The hooks we would use were rated for 80 pounds each. To make sure that my weight was distributed evenly, we would use four hooks across the top of my shoulders. That means we could suspend 320 pounds safely—more than enough.

The anticipation was worse than being a child the week before Christmas. As I waited for the night, I would find out if I would get Visions or just have a hell of an experience. The other aspect that bothered me was I really wished I could have this first experience at a better venue. I knew I was looking for a spiritual awakening, and the fact that I was looking for it at a party seemed counterproductive. But, it was what I had to work with.

I had been to more biker parties at this point in my life than I could remember, but I had no doubt I would never forget this one. I remember making my donation at the door and walking toward the back where Rooster had set up temporary shop. I took off my shirt and sat down, not really sure how this was going to go but knowing I was in way too far in my own mind to consider backing out. I also remember the look on my wife's face as she asked me if I was sure I wanted to do this.

For anyone who has never attended a good biker party, the music was so loud that it was difficult to hear the instructions from Rooster, the piercer. He gave me one last chance to back out before he walked around the back of my chair and started pinching the skin at the top of my shoulders like he was going to give me a neck massage. I was actually starting to enjoy it until I looked up into my wife's face, which was full of fear and concern. Rooster asked me to lean forward just a little, and then he started the countdown: 3 . . 2 . . 1. If you have ever wondered what it would feel like if someone took something the size of a typical ballpoint pen, heated it up till it was glowing red, and then tried to force it through a pinched mass of skin on your upper shoulders, well, it's not pleasant.



The resistance my skin gave against the hooks was crazy to me. Once the hook came back out of the skin, all the pressure and pain were gone, as if someone had thrown a switch. After the first hook went in, we repeated the same process three more times. The hard part was over: I was hooked, and now I needed to be connected to the suspension rig. I remember contemplating the dichotomy of intensity that I had just experienced and how minutes later it felt as if nothing had ever happened. Moving from the staging area to the center of the room, I stood as onlookers were waiting for the main event. Using 550 paracord, I was connected to a metal frame that was already hanging from the ceiling. Rooster finished plugging me in and then grabbed a climbing rope that was connected to a pulley system and eventually the suspension rigging.

He told me to start by leaning forward and backward to begin stretching the skin. Slowly, I would lean, feeling the hooks for the first time since I left the preparation area. The ministrations moved me further and further from where I started with each cycle. After approximately three to five minutes, I looked Rooster in the eyes, and there was an unspoken understanding of what was about to happen. Nothing was said as I leaned forward, and he pulled down on the rigging line simultaneously. I felt my feet leave the ground.

For what felt like much longer than it probably was, I had transcended. In the middle of a huge party, I heard nothing. I knew there were more than 100 people in attendance, but I saw no one. A peace and calm washed over me, and as quickly as it came, it was gone. I felt more than heard the music, the thumping of the drums and bass. I became aware of a burning sensation at the locations where the four hooks were. Rooster was telling me to swing, so I thought, why not? I started swinging my legs and got a good pendulum going until I started getting sharp pains in my lower back. I stopped swinging and just hung there for a while longer, the adrenaline in my body sharpening every sense. Eventually, I decided that my hang time was over for this round. After slowly lowering me back to earth, Rooster hugged me, and we went back to the staging area to remove my hooks.

I could have been knocked over with a feather when I looked at the state of the hooks after they were removed from my back; multiple hooks had been severely bent. Rather than my skin tearing, the steel hooks bent. I had proven that in this use case, my skin was stronger than steel.



I came to the realization that my body was there for my use, however I wanted to use it. It may not make sense to the rest of the population, but it made sense to me. I had no way of knowing at the time that these perceptions of myself would make my future decisions much easier.

I know the idea of a technical professional in a motorcycle club may go against the stereotype, but I have a bad habit of doing that. I lived my life as a blend of deep technical skills and life on the streets of Detroit's west side. Social engineering was a way to survive the harsh environment I was born in. The club gave me a place to practice and weaponize my skills, everything from mobile device compromise, common vulnerabilities and exposures (CVEs), remote code execution (RCEs), command and control, malware, ransomware, doxing, you name it. I like to say I got most of my experience through practical application. I spent close to 15 years of my life in these types of organizations and was able to leave in good standing. My club name, Hacker, turned out to be more than a name—it was a lifestyle.

And that was my day-to-day life for years. My personal identity was so closely tied to the persona of Hacker (the biker) that nobody called me by my birthname for years. My in-laws to this day call me Hacker, not Len.

I am retired from club life and have been for more than a decade, but these experiences helped define who I am and how I see the world around me. I never sit with my back to a door. I am always looking to see where the security cameras are and if there are any blind spots. I know every entrance and exit to every room I walk into, even if I have no intent to exploit anything. The security world is always trying to understand the hacker's mentality to be able to better protect their assets. I don't have to "think like an attacker;" I just have to think like me.

I won't be getting into much detail about any activities that were done during my active time in the clubs, but I don't regret that period of my life because without it I would not be the man I am today. It gives me a unique perspective on security or the lack of it. I was there; things were done; we will leave it at that. I'm not trying to glorify that time in my life, but I won't apologize for it either.

For years, I continued living this "double life," but nothing could have prepared me for the attack on my way of life that I experienced when I was told I was going to be a grandfather. The choices I had made up to this point had affected me, my wife, and my children, but the consequences were ones I considered an acceptable risk. I know I wasn't a good influence on anyone at that time in my life, but something about continuing that into the next generation pushed me to change my perspective. Something had to change; the risk was too great, my eyes were open, and I couldn't unsee the potential road before me. I had been spinning the cylinder and pulling the trigger every time I would ride out for the club and every time I hacked another system. It was time for me to grow up.

Unfortunately, my time in corporate America had only served to make me more jaded. The continuous reorganizations of personnel, the ever-shrinking responsibilities due to micromanagement, the weight of the enterprise stalling real technical progress. Eventually, with resource silos, my actual work was relegated to clearing logs on boot drives of Citrix servers. The lack of mental stimulation was the catalyst to my accepting a position with my first cybersecurity company, CyberArk.