

DARK FACTIONS

A Novel by D. A. Dalton

Chapter 1

Intrusion

Location: Cybersecurity and Infrastructure Security Agency, Department of Homeland Security.

Brandon Alton hovered over his computer screen, staring in awe. It was amazing! In some sense, it was a work of art. Brandon had just identified a computer virus that was better than anything he had ever seen! The defense department's AI system, nicknamed EINSTEIN, had done its job.

EINSTEIN, an Artificial Intelligence virus detection program developed by the National Cybersecurity and Infrastructure Security Agency Center (CISA) a few years back and was continuously being improved upon. Einstein was capable of monitoring numerous communication indicators between government agencies. Einstein also monitored some citizens' private communications, but that was something no one was willing to admit. In other words, it snooped on what was being said. If the conversation were of national security interest, then EINSTEIN would notify people like Brandon at the NCSC and let them know something was up. In some cases, the notification was not necessarily a national security issue but a political issue. In those cases, Brandon was instructed to pass the communications along to others of a more political bent.

Brandon sent an email out to his department head and colleagues, he had caught a rare beast, and word spread fast! It was always a big deal when a unique virus

was detected. There were so many copycat viruses out there that were the same old same old, with just a slightly different twist. Brandon was known by his colleagues as one of the best cyber crime Investigators in the department, so when he sent an email out like this, everyone took it seriously.

General Clark Bancot walked up behind Brandon and peered over his shoulder. "What the hell is all the noise about, son?" Brandon felt his stomach cringe when he realized it was The General. The General had a reputation for busting people's balls and didn't want to be the next on the list. Although Brandon had some defense against Bancot because he knew Brandon was the best damn security expert they had. Brandon knew Bancot couldn't afford to lose him.

"Well Sir, we have found a unique virus. It's the first of its kind, I think. EINSTEIN alerted us about it about two hours ago. EINSTEIN found a communication packet issue, so I investigated."

The General moved to one side of Brandon to look him in the face. "What does that mean? A packet issue? Keep it short son."

Brandon rolled his chair slightly away from his desk with his legs. "Information is sent across the internet in small chunks of data called packets. They are preceded by a header that describes information about the incoming packet. The header can be thought of as the address on an envelope.

The packet header contains the source, destination, and length of the packet, among other things. After the header information comes what we call the payload, or the actual information stored in the packet. Think of this as the content of a letter. In this case, the packet length in the header did not match the payload. Normally the packet

would be denied, but somehow these packets were getting into the system. This set EINSTEIN off!"

The General huffed a little, deliberately showing his boredom. He hated geeky stuff. Most of the time, this stuff was no big deal, yet he still had to endure the detailed minutiae to keep up appearances.

Brandon raised his voice louder to be heard above the chatter. "The most interesting thing besides how unique this virus is is where it was headed. The intended server it was attempting communication with was one of EINSTEIN's servers where EINSTEIN itself resides. It was attempting to compromise EINSTEIN! This is the first time we have ever found a direct attempted attack on EINSTEIN. Someone out there has intimate knowledge of our network topology, allowing them to target specific servers relevant to EINSTEIN."

The General looked right through Brandon, the wheels turning in his head. He came back to the conversation. "Listen, we need to find the source of this attack, anyone who has inside knowledge of what we are doing here is a huge security risk."

Brandon typed as he spoke. "We already have a trace program on it, sir. It's automated and starts tracing back to the source of the attack. It's only been running a short while and has found four thousand three hundred and fifty-two hops. Each hop represents a different computer."

The General's voice bellowed even louder. "Good God, is that even possible?" Brand shook his head. "Yes, it's possible, but it's definitely a record. We have never seen that many hops taken by one intrusion. We are dealing with a virus that has

already compromised thousands of other computers and used those computers to hide its tracks.”

Brandon swallowed hard, “There’s one more thing General. It’s the computer code in the payload, the actual program that was being sent from the attacker. We have already run our source code analyzer on it to determine what computer language the virus code is written in. This often tips us off as to what the intent might have been. Different computer languages are often used for different types of attacks. Well, here’s the thing General. The virus code uses no known source language; it appears its original source code was binary.”

The General threw both hands up in the air. “Of course, it’s in binary. Everything in this damn machine boils down to ones and zeros; even I know that!”

Brandon jumped in. “What I mean to say is that the original virus code was written in ones and zeros. There was no higher-level language used.”

“A higher-level language is used by humans to write readable code. The readable code is broken down into assembly language native to a particular computer’s processor, which is then broken down into machine code, which is ones and zeros. Whoever wrote this virus literally wrote it at the machine level of ones and zeros that the computer processor inherently understands. It would have been an incredibly tedious and error-prone thing to do. This is another first General; we have never seen sophisticated virus code written at such a low level.”

The General eyed Brandon. “Let me know when we have more details on this one. I’m assuming this one is a big deal, right?”

Brandon shook his head. "Yes, General, I would consider this intrusion attempt a big deal due to its atypical characteristics and targeting EINSTEIN."

The General stomped off, followed by two other top brass trailing behind him.

Brandon watched the General walk off as he thought to himself. God, I hate that pompous bastard. He scares the shit out of me. Brandon wondered if they were really dealing with something that had never been found before, something that he could start working on. He loved the excitement of finding new threats; it was what he lived for. He felt like Sherlock Holmes starting a new case; it was all adrenalin and excitement. The game is afoot, Mr. Watson!

Chapter 2

Elimination

Brandon swerved to miss a tree root sticking up on the path. He pedaled faster as the grade on the dirt path increased. His heart was pumping hard; he could feel the cool ache across his upper back and shoulders. It was a good ache. It meant he was getting exercise, and his muscles were just responding with copious amounts of lactic acid. He was tearing it up and making it count.

He left in the early morning hours at 6:00 am. He wanted to maximize his trail time and enjoy crisp, early morning cool air. He loved being able to get away out in the woods. This was his time to unwind and think without distraction. All he could think about lately was the intrusion against EINSTEIN. How was he going to find the source of the attack? Could he expect another intrusion that may leave more clues? Who else could he pull into this project to help out? He would have to go through The General to request more resources to devote to the EINSTEIN intrusion investigation.

What was up with the General anyway? He didn't seem to be taking the intrusion seriously. It had been two days now since the attack on EINSTEIN, and he hadn't even called a meeting about it yet. Wasn't he worried that this breach could reflect badly on the CISA, not to mention his own career? He was dragging his feet on this; Brandon was sure of it. Who could he talk to about this? He is the General's direct report. If he went around the General and talked to someone else, it would be political suicide. He knew what he had to do. He would make an anonymous complaint directly to the Office of Homeland Security. Protocol required an internal investigation into any anonymous

reports. Once the internal investigation started, he could wait for the right moment and speak with the officer in charge of the investigation. It was still risky. He would be the number one suspect on the General's whistleblower shortlist. At least he could deny it until he was blue in the face. Why couldn't he just let this go? The General must have his reasons for not wanting to pursue the EINSTEIN incident. He knew he couldn't let it go. If he just let it go, it meant everything he had devoted so much of his time and energy to was meaningless. All those countless work hours, late nights, and weekends, it's all in vain if this big fish gets away. Being on top of his game was what life was about. It's more than getting a feather in the cap that's at stake; it's his identity. He had solved many Cyber attacks in the past and built a reputation as the go-to guy for the more serious ones. This attack is a big fish, and it's going to be him that lands it.

The path hit level ground. He pedaled toward an opening in the trees where the sun came through in brilliant rays against the pure blue sky. Brandon was breathing hard. His black riding shorts hugged tightly against his legs. The stretchy material showed dark patches where blobs of sweat had dripped from head to shorts.

He started to get back on his bike when he heard a very faint buzzing sound as he looked up to his left. There it was. It was a hub-capped-shaped flying object about fifty feet up. Brandon raised his hand just above his eyes to block the sun. He squinted to try and see some detail on the object. No luck. It was just black. It gave off very little reflection in the bright sunlight. He estimated it was about three feet across.

Brandon instinctively reached for his cell phone in hopes of taking a picture but forgot that he had no pockets on his riding pants and his phone was sitting in his car.

Damn! Nobody is going to believe this. Why didn't I bring my cell phone?

The object was now stationary, hovering in one position about fifty feet directly above Brandon. It hovered motionless in the wind. Brandon looked directly up under the disk. There was nothing but smooth blackness, no discernible markings.

Suddenly a red laser light appeared directly on Brandon's forehead. Before he could react, a flash went off, and it was over. Brandon freaked out. He just had his picture taken! That could have just as well been a laser sight for a gun. The realization that he is alone in the woods and very vulnerable suddenly struck him. The fight or flight instinct rose in him on a wave of adrenalin. He hopped on his bike and took off down the path without looking back. Fuck the pictures; this thing was potentially dangerous! After ten minutes of all-out pedaling, he dared look back for a second. It was gone. He slowed down a little now while taking in gulps of air. He was glad he put some distance between him and the disk. The adrenalin rush that had taken over was now slowly subsiding, and rational thought began to replace survival instincts.

Brandon looked in all directions and couldn't see anything. He was out of the clearing and back on the wood-covered trails with limited sight distance. He was feeling much more comfortable now. He felt the muscles in his legs protest against the last ten minutes of punishment. He slowed down even more to a leisurely speed while continuing to look around. Brandon let a small chuckle out, thinking how scared he was. I wish I could have gotten a picture; now, no one is going to believe me. I'm just going to be another story on that urban legend website. For a moment, he even thought about turning around and seeing if he could find the thing. Even though he was much cockier now, his good sense killed the idea.

After twenty minutes of riding, Brandon estimated he was about two miles from the trailhead. He stopped and put both feet on the ground while straddling the bike. He reached for his water bottle attached to the inside tubing of the bike just under the seat. He took long swallows of water and dumped some of it over his head.

A low humming sound came through the trees, just audible enough for Brandon to hear. He looked further up the trail and could see the disk hovering about thirty feet above the trail.

He could turn around, but it would just take him deeper into the woods. The trailhead was further up past the black disk.

Brandon jumped on his bike and drove forward up the trail toward the disk. He planned to pedal past the damn thing and get out of these woods. As he pedaled toward the disk, he kept his head down low against the handlebars and forced himself to look down at the path, not up at the disk. At that moment, he rode under the disk. Small openings appeared on either side of the disk. Bumble bee-sized objects came out on both sides of the disk; the objects flew in a loose cloud-like formation. They made a faintly discernible whizzing sound different from the sound the disk made; it was a much higher and quieter sound but amplified due to their numbers. They flew together in two groups. Two clouds, flying in unison. They both started swirling like miniature hurricanes. Both clouds began to rotate around an imaginary center of rotation like galaxies being driven by gravitational forces. Suddenly, they stopped rotating and headed directly for Brandon.

Brandon was now pedaling like a maniac; he lost some of his steam due to his earlier efforts, but being scared out of his mind was helping to make up the gap.

He heard tiny sounds coming directly behind him. It was the sound a mosquito might make as it dodged in and out of a hapless sleeper's ear.

Brandon just barely noticed the first sting on his leg. His muscles were hard there, and his legs were already hurting. He felt another sting on the back of his neck, and this one hurt more. A quick pinch of pain and then a dull, continuous pulse of discomfort. Brandon looked down at his leg, at the first sting just below his riding shorts where the bare skin was exposed. A swollen, raised red circle the size of a quarter was there. Brandon couldn't believe a bee, of all things, just stung him at the worst possible moment. He glanced behind him quickly and saw two clouds of what looked like insects coming for him. It dawned on him that these weren't bees; they didn't move like bees; they were too organized. He was being chased by something, but they weren't bees. The next sting was high up on his right cheek. He saw the thing close up since it was an inch away from his eye. It looked huge from this vantage. A ray of sunlight caught the edge of whatever just landed on his cheek. It reflected the light in a strange metallic way. Its tiny wings fluttered so fast that they were just a blur. Its shape looked like a tiny clam with wings. The opening of the clam pointed in the direction of flight. It opened up like a clamshell opening. A small tube structure came out.

Brandon felt the pain on his cheek as the tube drilled into his cheek's flesh. It then retracted, leaving a drop of blood behind. It flew off and was gone.

Now they came at him from all directions. He let go of one bike handle and swatted at them as they got near his face. Brandon ran the situation through his mind. How far was the trailhead? It had to be less than a mile now. He could just keep

pedaling no matter how many stings he got. All he had to do was pedal. He could do that. Maybe, he would run into someone else before the trailhead. They could help him. One flew into his right eye. He instinctively slapped it. He felt the tiny wings crunch like hitting tin foil. The little bastard's crunch! His hand came down on another one just as it landed on his forehead. Again it crunched under his hand. He felt a moment's pleasure between stings. The back of his tight biking shirt was covered with them. He could feel the weight of their combined bodies. The pain of their little stingers. It felt like he was lying on a bed of needles.

Brandon felt his throat start to tighten, which made it harder to suck in air. His throat was dry. No, his throat was swelling! He began to make sucking sounds as it became harder to breathe. He felt his legs slow down, being deprived of oxygen. His mind focused like a mantra on one thought. The trailhead. The trailhead. The trailhead.

His front wheel hit a rock sticking halfway up on the trail. His weight shifted too far to one side; he hit the ground, lying face up. Staring straight up, a canopy of tree leaves was all he saw. He tried to get up, but his legs and arms felt like they weighed a thousand pounds. He could see the trees directly above him. The attacks stopped; now they were back in formation, just hovering over him, no stings, just hovering. He tried again to get up with all his might, but it was impossible. The trees started to blur, and he felt his eyes swell and water up. He was more tired than he could ever remember. Maybe he should just lay here for a while. Each breath came hard. He felt light-headed, and his thoughts began to wander. The trailhead, that was important, or was it? He closed his eyes. His chest rose and fell, rose and fell. Saliva bubbles began to froth up

around his mouth. They grew with each forced breath. The swarm was still in formation over him. His chest fell one last time, giving out a final lengthy breath.

All at once, the swarm stopped hovering and flew back into the black disk positioned about ten feet over Brandon's body. The large black disk swooped down and hovered just inches over Brandon's body for a minute; suddenly it shot straight up into the sky and was gone.