

Episode Fifteen: End Game

Robert G. Ferrell 2002-02-12

Chasing the Wind, Episode Fifteen: End Game

by *Robert G. Ferrell*

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It was a long drop to the pavement. It was so long that Baseball cap couldn't figure out where all the time was coming from, as he had apparently forgotten about the temporal distortion that can accompany stressful situations like, say, being chased by federal agents whom you've just assaulted with a laptop that contains irrefutable proof of your treasonous activities. A reinforced concrete sidewalk suddenly announced that time was up by hitting him very hard in the feet. So hard, in fact, that the shock wave traveled up his legs, punched him in the solar plexus, and knocked him flat on his back. His blood was still carrying an overdose of adrenalin, however, so he was on his feet again in a few seconds, despite the fact that the air around him seemed mysteriously to have run out of breathable oxygen. He looked wildly to his right and left, and made a snap decision to run in the opposite direction of his eventual destination, hoping to double back and lose his pursuers. Behind him, still on the other side of the chain link fence he had just scaled, the OSI agents yelled for him to stop. They had their guns out, but Baseball cap knew they wouldn't risk taking a shot at him in the heart of the city. Collateral casualties were bad for business, especially at Congressional appropriations time.

He ran for the nearest crowd of pedestrians and blended in with them as best he could. The first alley he passed, he ducked in for a few seconds and reversed his coat, changing it from bright red to a muted navy blue. It was an old trick, but sometimes the old tricks were the most effective ones. He had been buying reversible jackets for years now (and they weren't that easy to find); the habit finally paid off. He knew that any APB out on him would include the red jacket description. Changing coat colors wouldn't make him invisible to the cops for long, but he only needed to buy enough time to reach his waiting escape car.

He had gone about a block without spotting any further pursuit when suddenly a suited figure stepped out from a doorway to his left.

"Federal agent. Freeze!"

Without even turning to look at him, Baseball cap ducked down and pulled a woman pushing a

high tech baby carriage that looked like a spinoff of some NASA lunar rover program between himself and the agent. He spun around to run back in the direction he had come and thought better of it. Instead, he darted across the street, dodging traffic more nimbly than a slightly overweight middle-aged man should have been able to dodge. There was an agent on that side waiting for him, however.

"These guys are getting smarter than they used to be," Baseball cap muttered to himself, "Guess it's time to retire."

He jumped back off the curb, narrowly avoided being clipped by an irate taxi, and ran along the street until he came to an intersection. He turned right and scrambled up onto some scaffolding bridging a gaping hole in the sidewalk, an agent close at his heels. He glanced across the street and saw another one shadowing him over there. He knew he had to do something dramatic, so as he leapt from the scaffolding he made a grab for a passing produce truck and managed to haul himself up on the small rear loading deck. There wasn't much to hold on to back there, however. In grabbing the handle of the cargo door to steady himself, he accidentally unlatched it. The handle slipped out of his grasp and the door rolled itself up like a window shutter. Baseball cap grabbed the door track just as the truck ran over a bump in the road. He had been looking behind him, trying to assess where his pursuers were, and turned around just in time to be hit square in the chest by a wall of cabbage-filled crates, set in motion by the bump. He wobbled for a brief moment, then crashed to the asphalt, a mountain of cabbages cascading off the truck on top of him.

Man and produce tumbled violently in the street in some bizarre vegetarian ballet, cars braking madly and swerving to avoid joining the ensemble. When he finally came to rest, Baseball cap looked more like a botched batch of kimchi than an international spy. His trademark headpiece had flown off somewhere during the spin cycle. The battered bald head added a final touch of ignominy to a darkly comic ending: the centerpiece in a curb-to-curb bed of coleslaw.

Sic semper proditores - thus always to traitors.

Jake unlocked the door to his office and plopped down in his ergonomically correct computer chair, with deluxe seven-position adjustable lumbar support. He had concluded that the seven positions has been intended to accommodate each of Snow White's dwarves, because none of them even remotely matched the vertebral column of a human being. Having just finished a

grueling three hour session with a team of supposed technical experts from the DoD, trying to explain to them what the card he found in Merv's computer had been doing, Jake needed to sit down somewhere comfortable and unwind. Instead, he sat in the gray upholstered thing masquerading as a chair and tried to find a combination of settings that wouldn't cause his health insurance premiums to go up.

In a nutshell, the NIC had been rigged to pick up, encode, encrypt, and transmit the electromagnetic signals put out by nearby computer monitors to a remote IP address via FTP on a periodic basis. The system at the receiving end would then presumably decrypt those files and reconstruct the screen contents using the EMF data. Since the nearby monitors in Merv's case were all set to display a rather silly screen saver 99 percent of the time, however, all that was being sent to the remote site was an animated graphic of a bunch of flying household appliances with the Acme Ailerons logo emblazoned on them. Jake was not trained in the subtle nuances of intelligence gathering, but his gut instinct was that this information was not particularly helpful to whichever competitor or foreign government was responsible for the doctored NIC, unless they were trying to reverse engineer animated appliances remotely. The IP address hard coded into the firmware came back to a small company located on an island in the Caribbean, but Jake noted that the current owners had possessed that IP block for only six months. To whom it had been assigned when the spy card was gathering its intended data was anyone's guess.

Explaining all this to the DoD guys had been an uphill battle. They kept asking him to go over each and every detail again and again. He began to wonder if they had all been required to take (and fail) a technical comprehension test prior to being assigned to this project. He had to strip down his explanation to just one notch above baby talk--it was like trying to explain something to an Acme senior VP. Given the fact that the DoD had invented the term TEMPEST to represent standards relating to the reduction of electromagnetic emissions by data equipment, and given the fact that they were supposed to be experts on it, Jake felt that having to explain the basic concepts of emanation security (EMSEC, which is what TEMPEST was now called) repeatedly was a little odd. He could only assume that these particular experts were expert at something other than information technology and basic electronics physics. 'Filling out expense reports' was his best guess.

It took a while to sort everything out, but in the end it seemed likely that the man from whom Merv had gotten the computer had been the hapless victim of a little industrial espionage. Someone in his organization had been selling proprietary information to a competitor, and

(presumably) had been paid to install the nefarious card in a key computer. The feds reluctantly let Merv go once it became apparent that he had played no part in the operation, but he did receive a stern reprimand from Acme for installing an unauthorized system on the Acme network. Merv himself was simply relieved to be out of jail and back at work. He wouldn't go near the instrument of his incarceration again, and Jake finally dumped it in the "retired computer systems" room, where it cut a dashing figure as the centerpiece of a cunning arrangement that he had informally titled "Still Life with Dot Matrix, 5 1/4" Drives, and Cobwebs."

Now that he'd cleared up the mystery of the malfunctioning facilities workstation, Jake turned his attention once again to working on the formal information security policy for Acme. It was a bit of a dry assignment, and considerably removed from the hands-on stuff that Jake preferred, but he realized that it was vitally important that Acme have a written policy in place, and that he was the logical person to originate that document. He'd just have to buckle down and get it done. After the discovery by the Air Force guys of inline transmitters on the Acme 'secure' network and the repeater disguised as a utilities meter attached to the outside of the building, security had become a critical issue all the way up to the CEO's office. He hoped that his request for an additional person to help him with sysadmin stuff would be approved. He'd even take a part time CS student--anyone at all would be a blessing, now that his security duties seemed to be increasing geometrically.

He was hard at working slaving over a hot word processor when an intra-office courier dropped off an envelope for him. He glanced at it; it was from Human Resources. Probably the 401K change request he had asked for. His retirement account had taken a pretty severe hit from the large proportion he had allocated to tech stocks. He wanted to redeploy most of that into nice safe municipal bonds. A slow, steady yield was a lot less nerve-wracking than the violent ups and downs (primarily downs) of the stock market lately.

When he opened the envelope, however, he was surprised and puzzled to find that it contained a "Request for Promotion, Transfer, or Reassignment." He had no idea why they would be sending him one of these, as he couldn't remember asking for it. He had his hand on the phone to call HR when it rang. His caller ID told him it was his boss, Bob.

"Systems, Jake here," Jake answered, wondering what had gone wrong now.

"Jake, this is Bob. I'd like you to come up to my office when you get a chance. We need to

talk.”

“Uh, OK, sir, I’ll be right up. Should I bring anything with me?”

“No.”

“On my way, sir”

God, he hated that phrase: “We need to talk.” Jake put the phone down and looked at it with one eyebrow raised (he’d learned to do that as a child, watching the old *Star Trek*). That was unusually cryptic, even for Bob. Oh well, maybe Bob knew something about the equally cryptic envelope from H.R. It had been one of those days so far; the laws of thermodynamics dictated that entropy was just going to increase as the day wore on. Jake was no stranger to entropy.

As he trudged up to Bob’s office, trying not to think about what his boss could want to ‘talk’ about, it suddenly dawned on Jake that he hadn’t eaten lunch yet. “Well,” he thought a second later, “I don’t need any now: I’ve got all-you-can-eat butterflies.”

Two doors down from Bob’s office, Jake passed an administrative tech whose workstation he’d rescued from what had seemed to her to be certain silicon insanity (she’d somehow set the screen saver to come on after one second of idle time); she beamed brightly at him and gave him an encouraging but inexplicable thumbs up. Approaching weirdness overload, Jake knocked on Bob’s door.

“Come in, Jake. Have a seat.” Bob was very businesslike. While this didn’t increase Jake’s anxiety any, it didn’t do much to lessen it, either.

Bob sat there reading through some paperwork in a manila folder on his desk and seemed to be ignoring Jake. Jake stood this for as long as he could, then quietly cleared his throat. Bob peered over his reading glasses at him.

“I’ve been looking at this hiring request you submitted.”

Oh, now things were starting to make sense. This was going to be one of those lectures about personnel costs, making more efficient use of his time, etcetera. Jake squirmed in his seat and prepared himself for “looking attentive, but really in a coma” mode.

Bob paused again. Jake wasn't about to stir a second time. He'd sit there until both of them went senile before he'd do anything at all to encourage the lecture he assumed was in the offing. Sensing Jake's shift in tactics, Bob put down the papers and sat back.

"I had a long talk, or rather debate, with HR over this, and apparently it's against company policy for someone in your job classification to supervise anyone, even a student worker." Jake's shoulders sagged imperceptibly on hearing this, but Bob was trained by long experience to spot the imperceptible.

"I've got room in the budget for one full time sysadmin and one half time student to help you, but by the rules I would have to be the supervisor of record for them, and I think you know how much time I have for managing another employee, let alone two."

Jake looked down and nodded glumly.

Bob paused again, this time sheerly for dramatic effect. He was enjoying this.

"That's why," he continued in exactly the same tone of voice, "I've decided to promote you to Information Systems Manager, effective tomorrow."

Jake halted in mid-sag and tried to make sense of what he'd just heard. It was a losing proposition. He looked up at the older man for some clue that might give comprehension a foothold. Bob was grinning like a maniac on nitrous oxide--this was all Jake needed to see. He closed his eyes and swirled Bob's offer around in his head like fine cognac, finally coming to the conclusion that he approved of the vintage. He opened his eyes and, smiling, nodded his head in acceptance.

Bob clapped him on the back.

"Congratulations, my boy, and welcome to the ranks of management. Think you can handle it?"

That was a truly excellent question, and one to which Jake didn't know the answer. He felt he ought to make some sort of reply, though.

"I'll give it my best shot, sir."

"Call me Bob, Jake."

"Yes, sir. Uh, Bob."

Well, at least he knew what the H.R. paperwork was all about now.

That evening, he and Deanna went to one of those tiny little restaurants you can only find by stumbling over them while looking for an obscure dry cleaners an old high school buddy recommended to you the last time you ran into him in an airport cocktail lounge. They sat at an appropriately remote table, complete with the requisite candles and a single red rose in a nice faceted vase. Jake reached across the table and held Deanna's hands in his, trying to shake the feeling that they were in a black and white movie.

"How does it feel to be a manager?" Deanna asked, after they had gazed into each other's eyes for a few long moments.

Jake was being mentally swamped by the almost surrealistic run of good fortune he was currently experiencing, and as a result his synapses weren't firing in any recognizable pattern. He watched her lips move, but it was a few seconds before the fact that they had asked him a question registered in his luck-soddened brain. He tried to answer, but found his tongue had apparently swollen to three times its customary size. He finally managed to produce an intelligible sound--only one syllable, but he felt it unwise to push for too much too soon.

"Good."

Deanna laughed at his reply. "Well, that's a relief. Good is much better than bad, or even indifferent."

Jake smiled at her and nodded. He released her right hand and felt in his coat pocket for the velvet case. He brought it out of the pocket and held it under the table. He fingered it nervously, waiting for the right moment, and suddenly lost control of it. The box dropped and bounced off a leg of the metal pedestal supporting the table. Jake remembered how much he had paid for what was inside the box. He panicked and lurched forward to grab at it as it fell. In the process, he managed to hit his forehead rather hard on the edge of the table. He scrambled madly under the table, searching for the box with outstretched arms. Finding it at last, he grappled it with both hands, losing his balance during the struggle and ending up sitting awkwardly on the floor. He became aware for the first time of the throbbing pain in his

forehead. He sat there with the box in one hand and the other rubbing his wound. Deanna, who had been in turn amused then concerned by his rather graceless antics, knelt down to him and kissed the angry red welt above his right eye tenderly.

"Are you all right?" she whispered, "What on earth were you doing under there?"

Jake looked up at her and tried to answer, but he realized that it wasn't going to be possible under the present circumstances. Instead, he opened the little box and held it up to her, forcing out the only two words he could think of to say.

"Marry me?"

Ian swallowed hard. There was nowhere to run; he didn't even try. The agents were surprisingly polite. They didn't grab him, or threaten him, or even tell him he was under arrest. They simply asked him his name and escorted him back to their car. They drove him in silence to a rather stark looking gray building near, but not actually on, a local Air Force base and asked him a few questions about his computer activities, his knowledge of hacking tools and techniques, and then grilled him in detail about the message he had sent concerning Acme Ailerons. Ian answered as truthfully as he could. When it came right down to it, he didn't feel nearly as persecuted as he expected. It was beginning to dawn on him that the government wasn't quite as it had been portrayed by some of his hacker underground buddies. There were no bright lights in his face, nor any intimidation tactics. They gave him a soda, a comfortable chair, and even let him watch TV whenever they left the room.

After a couple of hours of this sort of treatment, they thanked him for his cooperation, and drove him home. That was it. He didn't have to sign anything. They didn't even talk to his parents, at least not in front of him, anyway. He went immediately to his room. It was exactly as he had left it--not a single thing was out of place. Ian sat on the edge of his bed, his head spinning. He'd expected to be sitting in a holding cell somewhere by now, trying to figure out what he could do to save himself. Instead, he was completely free, and they hadn't even taken any of his computer stuff.

As the evening progressed, Ian began to piece things together. They had traced the message back to him--not to arrest him, but just to find out how he knew about the Acme computer and its illicit transmissions. Either they weren't aware of the indiscretions of his script-kiddie phase,

or they weren't interested. Either way, he wasn't going to take any further chances.

Ian knew that he had dodged a bullet this time. He decided that he would remove himself from the firing range before the next round went off. He used DoD-wipe to get rid of everything that would look even remotely suspicious on his systems, especially incriminating emails. That stuff was behind him now, and he was going to keep it there. The only things he couldn't erase were postings he'd made to archived lists, but thankfully those were relatively rare. Most of his communications in that realm had been made via IRC or ICQ, neither of which were likely to have any long-term records made of them. He kept his hacking tools, but moved them all to a directory he called "Pentest." They somehow sounded a little more legitimate that way.

Ian leaned back in his chair and let out a deep, slow breath. He felt his stress level finally beginning to fall off. It was time for bed, but before he went he'd check his email one last time. Among the offers for low interest mortgages and urgent "business proposals" from Nigeria, he saw a message from the current big cheese of the BroadBandits. More in annoyance than anything else, Ian opened the message and read it. It was his long sought-after invitation to join that group of 'leet hackerz.' Ian scowled at the screen for a second, then suddenly broke out in laughter. He hit reply and typed in just one line:

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BroadBandits.* > /dev/null
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He deleted his usual signature block and simply typed in "Ian" before sending the reply on its way. The BroadBandits and ir8_d0g belonged to his childhood, and that era was now officially over. He felt for the first time in his life in charge of his own destiny; it was a feeling he relished.

Douglas sat at the computer in his library playing a turn-based strategy game. He wasn't really all that interested in it, but it gave his mind something to do besides thinking about how desperately slowly time was passing. He looked at the clock every half an hour, or so it seemed by his personal reckoning, to find that only two minutes had actually ticked away in the objective world. He was sorely tempted to check the clock to make sure it was working properly, but since his watch was in perfect agreement with the darned thing, it seemed like a pointless action. Oh well, back to the game for a while.

Finally, it was ten o'clock. The lottery drawing would be taking place right at this minute. He could of course go watch it on TV, but Douglas preferred to wait until 10:30 or so, when the results were posted to the lottery Web site. He played another couple of rounds of his game and tried not to think about the lottery. It was like asking a starving Texan not to think about chicken-fried steak.

It wasn't until 10:42 that Douglas finally allowed himself to save the game, exit it, and fire up his Web browser. He went to his bookmarks and found the one for the current winning lottery numbers. After hesitating for a couple of seconds, he closed his eyes and clicked. He counted "one-one thousand" up to ten and opened his eyes.

He stared at the screen for a full minute. The room seemed to be rotating slowly and majestically clockwise. He almost felt as though he were becoming dissociated from his body, the way he sometimes got when experiencing 'highway hypnosis' while driving long distances.

Finally he tore himself away from the screen and picked up the phone.

"Hi mom, it's me. No, nothing's wrong. Listen, I'm sorry to call this late at night, but I'd like you to do me a favor. You know that little cabin out on the lake that you and dad have been drooling over for the past five years? Would you have the realtor contact me about it? I think I want to get it for you and dad for your thirtieth anniversary. How can I afford it? Let's just say I got a really nice bonus at work."

The killer satellite advanced on its target. Back on Earth, the NORAD folks knew it was there, but didn't know what they could do about it. It would take less than fifteen more minutes for the rogue device to close the distance between itself and IntelCom 3. They could only guess what its intentions were, but the odds were pretty good that they weren't friendly.

In one of those wild coincidences that usually only happen in the movies, a solar flare of healthy proportions (X6, if you're into solar flare classification) erupted from the surface of the Sun at that moment. It was several times the size of the Earth, and contained an almost unimaginable quantity of radiation energy in a wide range of wavelengths. Spreading out from the point of origin in a convective column just below the solar equator, the initial massive burst of charged particles raced away at the speed of light, sending an expanding multilayered shell of energy coursing through the cold emptiness of space. The Earth was in the direct path of this

pulse, as it happened. A little less than eight minutes from now, the daylight side of the blue planet was going to be lit up like a 6,000 mile diameter neon sign by the outermost band of fugitive solar energy. Communications would be disrupted, auroral displays would increase dramatically, and weather patterns would be altered. Satellites wouldn't fare too well, either.

One of the problems with solar flares is that you never know they have happened until the light from the event reaches you. Of course, along with the light comes the first electromagnetic shock wave, which is a tad inconvenient if your job is to warn people about solar activity. If the flare happens to be pointed more or less directly at the Earth (or, more accurately, where the Earth will be in eight minutes), a good deal of the damage is done before anyone knows what hit them. In the Acts of God department, this was a biggie.

This particular solar event not only spawned a flare, but also sent a coronal mass ejection (CME) blazing toward Earth; since those travel rather slower than the speed of light (this one at a paltry 6.5 million km/h), it wouldn't get here for a number of hours yet. The CME was preceded by several waves of highly charged particles, however, and the first of these washed over the Earth like a tsunami just as the killer satellite was positioning itself within striking distance of IntelCom 3.

Solar flares, like most other disruptive natural phenomena, follow their own largely unfathomable schedules. Experienced satellite designers know this, and do what they can to protect orbital payloads from destruction by the sharp increases in ambient radiation that accompany solar events.

Global Technical Products had not been able to procure experienced engineers for this project, however, since they had to choose from among the relatively small number of people for whom designing such an antisocial satellite for a private company posed no particular moral dilemma. As a consequence, while IntelCom 3 swung shut its solar panels and temporarily went into "safe mode" to ride out the storm, the GTP satellite took the full brunt of the radioactive torrent like a galleon receiving a broadside. The circuit that controlled the grappling mechanism sparked, popped loudly (or would have if there had been any air to conduct the sound), and fused itself in the closed position. The grappling head started rotating at full speed, which it was not designed to do from a dead stop, and the resultant counter rotation set the satellite to wobbling badly. It frantically signaled to ground controllers that spatial orientation was being lost. They tried to use the maneuvering thrusters to counteract the spin, but the radio command to fire was trampled by the billions of particles coursing through the orbital path of the satellite. The

wobbling continued to intensify, until eventually the satellite simply started to fly to pieces.

About ten minutes after the initial solar particle wave hit it, Global Technical Products Orbital Platform #1 had been reduced to a three hundred cubic meter area of space debris, whose already decaying orbit would soon result in quite a nice episode of 'shooting stars' for folks on a track that started in Northern Africa and continued all the way to the Black Sea. Somewhere toward the end of this path a lizard looked up from beneath a sheltering rock at the strange streaks of light in the sky and smiled a tiny reptilian smile.

The next morning Deanna followed Jake so he could drop off his car to have the tires rotated and alignment adjusted. She picked him up at the garage and let him out a couple of blocks from Acme Ailerons, because that was as close as her normal route to work took her. They kissed several times in parting. After she drove off, Jake stood there for a moment watching her car disappear in traffic. He couldn't get over the fact that she was now his fiancée. His feet scarcely touched the sidewalk as he made his way to the office. Along the way something caught his eye--it was an oddly-shaped object sticking partially out of a drainage grate. He bent down and picked it up. It was a rather nice baseball cap: a little soiled and beat up, but still wearable. He dusted it off with his hand and put it on. It fit perfectly.

Whistling and sporting his new-found headgear, Jake floated down the hallway to his office. On the way he passed a crew from maintenance with carts full of various construction supplies. One of them asked him where room 1A12 was. Jake pointed out the empty executive corner office at the end of the hall.

"Thanks," said the crew chief, "We've got a work order to get it ready for the new Information Systems Manager."

Jake smiled. "Well, I'm sure he'll appreciate your efforts."

He went into his old office and started packing things in the boxes he found just outside the door. There was a letter on his chair. He stopped and picked it up. It had the Acme Ailerons logo embossed on it, but nothing else. He opened it, and nearly fell over when he saw what was inside. It was a bonus check for \$5,000 and a letter of commendation and congratulations on his promotion from the CEO of Acme himself.

Life, Jake decided when his head stopped spinning, was good.

Epilogue

This seems like an opportune moment to thank all of the loyal readers of this series, many of whom have taken the time to write to me with their comments and expressions of support during these past 17 months. In this age of instant gratification and sequels that are in production before the first movie is even released, it's nice to know that something as old-fashioned as a (more or less) monthly serial (and, moreover, one that contains no graphic violence, profanity, sex, high explosives, or even any car/plane/helicopter/snowmobile/luge chases) can still draw an audience. For anyone out there who continues to think that Information Security professionals can't appreciate a good storyline, get with the program, dudes. ;-)

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