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# Patrolling in the Infosphere

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*“Time to drug up and synch in to your drones. We step out in ten,” Staff Sergeant Nguyen said while walking briskly down the row of cots in our inflated tent. “And,*

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make sure you link up with the NCNA team leader before we step this time,” my squad leader adds without turning around to look at me.

“Got it.” I’d been reprimanded by the company expeditionary team commander for failing to coordinate a patrol with my counterpart a couple of days before. He accused me of deliberately doing it, of holding a personal grudge.

I swallow my pill with a swig of warm, oily water and scan in to my two drones. Our medic smiles wryly from behind his projected display as the red light sweeps across my face, picking up the implant just below my right cheekbone. “Sync to Specialist O’Brien, 4321929654, successful. All systems operational. Power: 89%.” My two angels chirp in near simultaneity, their slight offset creating an electronic echo.

I push out of our tent, the inflator humming quietly by the flap. God, it’s hot out here. It reached 142 Fahrenheit the day before, and the intel bot reported that it’s only going to get hotter. The black solar cell outer layer of the tent is hot enough to cook on. The company expeditionary team we replaced claimed it hit 150 a half-dozen times during their 90 days in the dust. It’s crazy we keep patrolling in the middle of the afternoon.

I quickly make my way across the open yard to the Chinese tent. My display lights up as I rush to get out of the open. Damn it! I forgot to mute my display again after spending my precious time off after this morning’s patrol scanning the newsfeeds and talking to a groggy Lucia.

“Mark, do you have a second?” Lucia again.

“Not right now, babe. I’m getting ready to head out.”

“Head out? Again? You were just out this morning. And what the hell are you doing outside without your suit?”

“The suit’s still charging up. The dust clouds mask the damn solar panels, and I want to go out with a full charge.” I push my way into the vestibule of the Chinese tent. Their inflator is a lot quieter than ours.

“Mark! Seriously? They hit you with guided mortars just yesterday. I saw the video on SkyChat. The mortars hit your tent!”

“Yeah, well, they can’t penetrate the tents. I’m in the vestibule of our lovely brothers now. What is it, hon? I really need to go.”

“Mark, I’m sorry you have to work with them. I talked to your mother about it. She had a good point. They aren’t the ones who killed your father in The War. Maybe their father or uncle did, but not them. And besides, it’s not even the same government anymore. We won The War, remember?”

“Yeah, but they still control all the mines and oil fields on this drying wasteland of a continent. And most of them live better now than before the war.”

“Got it. And Africa’s not a wasteland, just the part you’re in. Fried by the temp rises and desertification. The parts on the Indian Ocean coast that are still above the floodplain are about on par with our East Coast these days.” Lucia loves to work in her politics. “Listen, I need to talk to you about our daughter’s teacher. She keeps contacting me about her—”

“Lucia, I’m sorry, I’ve got to go. Nguyen will chew me up for videoing home on duty like this again. Bye.”

“Mark, w—” I switch out and mute the personal line in my implant before knocking on the inner door of the United Provinces of China’s tent. Staff Sergeant Nguyen has been cracking down on personal implant use while on mission time, a losing battle in my opinion. PFC Dwiezer in Sergeant Mendez’s team bragged about watching an entire movie while on patrol a few weeks ago. That boy is going to end up dead or in confinement before this rotation is up. And the Chinese would flip out if an American soldier came into their tent with a video call running.

“Yes?” one of their hackers asks in a thick Mandarin accent.

I speak straight into my watch. “We’re leaving in about five. You ready?” The Mandarin translation comes out a moment later.

“Yes, New Chinese National Army always ready,” comes the response in halting English.

I make my way out of their inflated tent as fast as I can, running back across the scorching courtyard to my own tent. This is the part I like. The e-pills are fast acting, but I wish they were faster. My head feels lighter and time seems to slow down. I start picking up on little details, like the blinking charging light on Mendez’s suit off to my left and a thread on the end of Smith’s bunk swaying in the breeze of the tent’s air conditioner near the door. I walk past the rest of the squad to strip off my PT gear and skivvies and pull up my link-suit, the network of circuits and silicon threads gleaming down my arms and legs and chest. The link-suit requires full skin contact to work. It synchs right into your nervous system, and, as a bonus, keeps your body temperature at a performance optimal 98.2 degrees. My vision hones in; I can see each minute thread of silicon on my skin-tight suit as I zip the front up to my neck and pull the hood over my shaved head. I can hear the individual zipper teeth of each of my fire team members’ suits as they zip up. Time slows down as I begin scanning the mission briefing in my display, the hundreds of lines of data projected onto my retina move fluidly while I absorb each piece of information.

Security patrol. Check. Ensure the epidemic is contained to the clinics the Chinese set up two days ago. Check. Make

sure the resisters aren't stealing any of the bodies before they're burned. There are reports the resisters are trying to harvest the synthetic bug to spread the epidemic farther south. We aren't sure we can stop it if it gets into what's left of the greenbelt along the Niger River. Our security patrol is critical to the World Health Organization's containment plan. Ha! Our squad security patrol is that important? I doubt it. But one thing's for sure—the Russian and Brazilian cube-sats will be watching our jamming bubble and broadcasting it over SkyChat. The whole world will know right where our squad is, even if we scramble the hi-res images. And the resisters will know our route again. If they hack into our transmitter like they did last week, we'll be uncovered and the cube-sats will beam live images of us around the world as we fight off any ambush. It's almost a guarantee they'll throw some poor kid, probably some helpless six- or seven-year-old girl, right into the mix where she'll be torn apart by their bullets and ours on live SkyChat in front of an audience of hundreds of millions. That's exactly what Moscow and Brasilia want, to humiliate us in the never ending battle for control of world opinion. That's why we have the Chinese with us. The New Chinese National Army runs the clinics, and the resisters can't defend against our hackers and theirs at the same time. The attack codes are just too different.

"You tell them?" Staff Sergeant Nguyen asks as she strips off her PT gear and skivvies before suiting up in her link-suit. The suit sucks tight to her body as she puts it on, the miles of silicon trails linking into her nervous system through her skin and flesh. She then pulls her hood over her shaved head, leaving only her face exposed. The hood's silicon trails light up slightly, showing they've linked into her thoughts to control her suit and angel drones. Unless the resisters or their allies are able to hack or pulse her.

"Yes, sergeant, they're tracking. I told them five minutes." She can't stand the Chinese any more than I can. But for her it's because they look down on her. Partly because they still don't have women in their grunts...one of the last nations without them, but also because of her name. Her great-grandparents moved to America nearly a century ago after our war with Vietnam. And she's only a quarter Vietnamese anyway, no more Vietnamese than I am Irish, if one of my ancestors even ever lived in Ireland. But the Chinese certainly haven't forgotten The War, or the islands the UN awarded Vietnam mineral rights to.

"Good. Let's load in second squad. Everyone done with the briefing?"

"Hoo-ah!" the grunt chorus shouts back with a subtle mix of motivation and sarcasm.

I step into my exoskeleton, my link-suit hooking into the inside of the exoskel. "All systems charged and functional. Left knee joint operating at partial strength, but combat ready," the exoskel's voice calmly reports. They hit my knee hard three patrols ago. The contractor jury-rigged it to function...partially. I can still run up to forty-miles-an-hour and jump to the third floor windows, but the outside of the joint started vibrating and pulling oddly to the right on patrol this morning. It'll be fun trying to hoof it in a one-hundred and fifty-five pound exoskel plus another sixty pounds of gear, weapons, and ammo with my own knee power on the left side if that thing gives out.

Angels, let's go, I think to myself. My two synched drones lift off the charging shelf and lock into my exoskel's shoulders. The suit hums softly and each step clinks lightly as I line up with the rest of the squad for our final pre-combat checks.

Staff Sergeant Nguyen's exoskel head turns and looks over us. I can see her face through the clear polymer face shield. She has a sly smile. I've got to hand it to her, she loves patrolling.

"Second squad online and ready," her voice projects over our intercoms.

"Copy second squad. We have a good synch here in the company operations center. Information operations and intel are both online and monitoring. Your Cyber Force bubbas are up and running ready to save your hides. Air Force drones are airborne and you've got priority of fires from one Navy railgun. No news feeds right now. There's at least one Russian cube-sat up there watching our sector, but it's not projecting over any social media yet. We've let Fort Meade know, and they should have it down soon. Tell us when you're ready to step and we'll start chatting."

That's my drinking buddy, Coder Second Class Hawkins, for you. He never passes up a chance to say in fifty words what can be said in ten. Makes him a good drinking buddy, especially when he gets going. I like to give him crap for being the only Cyber Force hacker deployed in our sector. His whole service spends most of their careers stateside. But no one doubts that they're the main effort.

Chatting...damn. He and his reach-back squad in Maryland are going to start lighting up the news feeds and social media soon. Lucia's going to be pissed. I bet she's watching right now from Fayetteville. Let's see, how many hours ahead of the East Coast are we? Five? She probably hasn't left for work at the intel fusion cell on base yet. Probably at home getting Cindy ready for school and watching #DCo3dBCT82ndAirborne right now, monitoring the Russian cube-sat feed and our chatter at the same

time. I bet Fort Meade gets the cube-sat down right about the time we're wrapping up our patrol, as usual.

"Second squad ready to step." Staff Sergeant Nguyen.

"Copy, second squad. The public affairs specialist is up and transmitting. We've got a foothold into the local internet exchange point, and we've got good visual on the whole town from the drones. No abnormal activity. Go ahead and step."

We leave the tent, the nine of us stepping into the scorching sunlight as two Chinese field hackers march across the courtyard in their suits. Their suits' exoskels look suspiciously like ours...same design and functions and almost the same weapons systems. Suits look a little sleeker and newer; less used. Two headless mules, our ammo, water, and gear resupply drones, fall in behind us, their legs moving rhythmically and spider-like as their LIDAR sensors navigate the terrain in front of them and keep them locked on to us 20 yards to our rear. They follow us like four-legged mechanical spiders, crawling across the dusty, crumbling streets between our company's firm base and the center of town.

A few minutes into the patrol Specialist Bronnan runs ahead, jumping over a burned out double-decker bus to take up his over watch position with Specialist Kates. Kates is good. She's our squad spotter, calling in the hypersonic railgun rounds from the Navy squids sitting offshore a little over three-hundred miles from here. Bronnan is a damn designer. He's the only one in our squad, but they're starting to come into the Army. There are laws against giving designers preferential treatment *and* prohibiting discriminating against the bastards, but I don't like them. I don't trust them. I know they're human beings and all, at least technically, but I don't think I'll ever get use to the idea of a person whose traits were picked by his parents. And I think it's crap that he gets to run the same Army physical fitness test and qualify on the same marksmanship ranges as me. The man can run a 3:40 mile and do sixty dead-hang pull-ups, not to mention that he can hit a bullseye at 1000 meters without a tracking bullet. He says he has the equivalent of 20/5 eyesight. And he can think faster than us, even when we take the e-pills. I know they say thoughts like mine are prejudice. But these damn designers are like robots to me. I don't think someone like me will even be able to get into the Army ten years from now. Us naturals—"love babies," they call us—can't compete with the designers. And they just won an International Court of Arbitration case that let them into the Olympics. Not one natural even had a chance of medaling at the last Olympics in Lagos not all that far from here. It won't be long before decrepit nations like this one will have designers too. Our designers will be the only ones capable of fighting them. It's the end of us in

my opinion, and I think the next big war will be between the naturals and the designers. No more America and Japan versus China and The Philippines over sea lanes, and no more America and India versus Russia and Brazil over cyberspace spheres. It's going to be us naturals against designers to the death for control of the planet. The only chance we'll stand will be to use automatons, which are currently outlawed by the International Conventions on Artificial Intelligence unless they're synched to a controller.

"O'Brien, take your team around to the right. Satellite us two blocks over that way, and keep the New Chinese Army squatters with you. Keep your damn eye on them and make sure your linkup is tracking them every step."

"On it, sergeant." In my heightened e-pill state I see kids three blocks down darting out of the covered courtyards where they swelter in the heat, leaving the mag-fans blowing only slightly cooler air into the covered streets and alleys. The blare of a thousand tablets fills the streets with a symphony of Ejjaghan, Mandarin, Arabic, English, and Swahili banter. I hand signal to the two Chinese soldiers to fall in behind my team. At least we don't allow them to synch with us.

Execute overwatch, auto kill any unidentified drones, I think. My hood picks up my thoughts instantly. Both my angels lift off from my shoulders. Six more come off the shoulders of my team members. My display lights up again, projecting what each of my angels sees into my retinas. I can see the overlays of the town across my vision, every person, goat, and dog showing up as a blue heat signature, their body temperatures cooler than the ambient temperatures indoors and out. The angels also scan the skies. I see icons for our drones, news drones, SkyChat drones, the Médecins Sans Frontières drone, the Human Rights Watch drone, several local government drones, and UN drones all around us, but no bogies or unknowns.

"You're up on the socials," Hawkins' voice comes over the comm. "Which ones?" Staff Sergeant Nguyen asked.

"Most of them, sergeant. SkyChat is tracking you, and you're up on Wie-un and VuKontate as well. We're tracking. Public affairs released a statement about your patrol providing security to the locals, getting them water and medicine, stopping the synthetic bug from becoming a pandemic, and yada yada yada. The Russian and Brazilian newsfeeds are already making comparisons to that patrol in Delta Sector a few weeks ago, the one that accidentally killed the kid."

"Christ."

"We're already countering that. The company commander is tracking, too. We've started livestreaming your forward

view displays with a three-second delay. Coder 3rd Sauber is back at the Fort monitoring and splicing those. You ready for an interview? World News Alliance is requesting.”

“You take it, Hawkins, I’m a little busy.”

“No can do sergeant, the general’s orders. It’s got to be a Joe on patrol...show our true, unfiltered side.”

“Copy Hawkins. Sergeant Mendez, interview time.”

“Seriously, sergeant? On patrol?”

“You heard me, Mendez. Interview. You’ll be famous.”

Sergeant Mendez, he’s got first team, links in. Thank God for the e-pills. He can keep an eye on his angels, his team, Staff Sergeant Nguyen, and what’s going on around him while talking to whatever bot reporter is interviewing him this time. He may be a natural, but he’s good at the cognitive splits, even better than me on the e-pills. That’s why she picked him.

Sergeant Mendez switches his intercom off and starts his interview while patrolling. Lucia is probably watching and listening to it, while watching the live feeds of our patrol from the cube-sat and drone cameras. I don’t know why she does that to herself. Staying up watching my patrols, calling me on the display in my eye as soon as I get back, berating me if I keep it muted too long. I know my grandfather was able to chat with my grandmother online soon after finishing many of his patrols in Iraq back in the opening years of this century. But she couldn’t watch his patrols live. What a different world. He told me stories of *his* grandfather writing letters home from Korea, letters that would take a week or more to cross the Pacific. My great-great grandmother would go days and even weeks without receiving a letter. She had no idea if he was patrolling or fighting or messing around with his squad-mates or dead. But we haven’t been in disconnect for years...for at least a generation we’ve been continuously linked in to the nets. Nowadays the world instantly knows when you die.

My angels pick up three armed men moving around the corner of a building two blocks away. Not enough info to engage, but enough to keep an eye on them. I think about Private Smith and Specialist Al-Abadi moving into an open wedge formation, covering the alleys to our west in preparation for a potential ambush by these three. My link-suit transmits to theirs, guiding them as they move to the edge of the road and then into the adjacent alleys, their angel drones watching behind and in front of them. One of my angels registers two of the three men’s body temperatures rising faster than the ambient heat exchange should cause. “Al-Abadi...suspicious body temps from two of those three. Watch all three, they’re probably up to something.”

“I see it too, O’Brien. On it.”

Suddenly my display starts to dim and shutter.

“Hawkins, something’s not right.”

“On it, O’Brien. Looks like we have a hack in. Locking on now. It’s routed from Ankara through Milan and then Newark back stateside, but from the code I’m seeing it looks eastern European in origin. I’m blocking it now. You should be good in a second.”

“How are we on the messaging, Hawkins?” It’s Maj. Grossier, the expeditionary company commander, our CO, coming on the line now.

“Good, sir. The info ops shop is showing our patrol. Russian media and some private info center out of Dhaka is showing dead bodies along the route and old footage of our soldiers killing someone in a previous firefight. The images are being super-imposed on the current streets, but we’re countering in twenty-three languages right now. No significant chatter on the network at the moment, and the major news organizations seem to be ignoring us. The fringe networks on both sides are off the hook, but nothing out of the ordinary. It looks like only about 2.3 million people are following the patrol, and only just over one million actively so. The follower count is rising by about 30 thousand a second—”

“Break, break, look sharp squad,” Staff Sergeant Nguyen breaks in. “I’m getting a feed from our cube-sat that we have a swarm coming our way.”

“We see it here,” the CO responds. “They’re low and on a short range comm link, possibly even an old Bluetooth or the like, but we’re using your exoskel receivers to pick up on their signals. The router is probably nearby in somebody’s pocket or backpack. Get ready to fight while we hack in and try to find the source. It’s got to be close with a signal range that short.”

“There they are!” I yell, my angels locking on. “Open up your angels!” Our shoulder drones start shooting pulses at the drones in the swarm, trying to break their links.

“Drones locked,” my angels chirp in my head almost simultaneously. I raise my rifle to a 45-degree angle, pressing the sync button on the side of the pistol grip while looking at the targeting cross-hairs displayed against my retinas from my angels via my implant.

“O’Brien locked and firing.”

“Al-Abadi locked and firing too.”

I pull my trigger, my M-43E sending out three-round bursts of guided 10 mm by 2.5 mm tracking rounds. I look at a different enemy drone in my retina display just before each burst, the e-pill allowing me to track onto a new target in less than a second to keep pace with the bursts. I hear the report of Specialist Al-Abadi’s M-43E service rifle as he does the same. Soon Smith follows.

The lead drones start to come down as the tracking rounds arc over the five blocks of the four- and five-story slum buildings separating us from the swarm. Our angels start disabling some as their comm links are cut by the pulses. Several disabled drones link back in quickly and start flying again, but at least the link breaks slow them down. Our headless mules race up close behind us, ready to reload our rifles.

“Tough signal, guys” Hawkins says dryly. “We see them trying to hack in, but they’re covered. Working with the Chinese on this. We need you and them to move closer to get a stronger lock.”

I start to run toward the drones, now three blocks away. Smith, Al-Abadi, and the two Chinese soldiers follow. We close fast, hitting a forty mile-an-hour sprint in our exoskels after just a few steps. The first drones to come into plain sight pop over the line of crumbling cement and rebar buildings in front of us. They start firing as soon as they clear the tops of the buildings. The rounds bounce off our armor and visors, but a few dig deep into the armor plates.

“Damn it, I think they’ve got mini-sabots!” I yell. “They’ll punch through our armor soon. Keep firing, but get inside fast, around a corner so the auto-tracking rounds can’t turn!”

The drones are falling fast to our own rounds. I see the belt of ammo feeding out of my exoskel’s right forearm into my M-43E.

Three men wrapped in flex armor pop around a corner down the street. Two open up with machine guns while the third aims an antenna our way.

“Pulse gun, nine o’clock!”

Private Smith points his weapon in their direction and pulls the trigger. His weapon unleashes a volley of fire, striking the three and knocking them to the ground. But the resister with the electro-pulse gun is able to fire before he is hit. Al-Abadi falls to the ground, his suit’s circuits thrown by the micro-electromagnetic pulse generated by the gun and the backpack battery unit the resister wears just as an explosion rips through the alley. Smith and Al-Abadi vanish instantly.

“I’ve got a complex ambush over here,” I yell into my helmet.

“The casevac drone is on the way,” comes the soothing automated bot reply.

My M-43E’s low ammo indicator flashes in my retina display. “Re-arm,” I say and think at the same time, trying to calm down from the events of the last few moments as I crouch beside the wall of the building next to me. “Smith, Al-Abadi, talk to me.”

“I’m good, specialist,” Smith replies. “That IED wasn’t strong enough for the suit. It looks like all three of the skinnies are down. Our sabots punched right through their flex armor. Al-Abadi’s suit looks like it’s down hard. Getting to him. He’s probably cooking in there.”

“Casevac drone is ten seconds out,” I reply, watching the status on my display. One of the headless mules trots over to me. I rearm as the casevac drone completes a swift dive into the alley and hooks on to Al-Abadi’s suit. He’s gone in an instant, whisked back to the company firm base through the dusty haze. The drone swarm has dissipated too, but it looks like several of them are headed back toward Staff Sergeant Nguyen’s part of the patrol.

“Swarm headed your way, Sergeant Nguyen.”

“I see it. Ops center, how are we looking?”

“Just about there,” Hawkins replies. “It looks like the controllers are spread everywhere, like usual. The Fort is indicating cafes and homes tied into internet exchanges in Sevastopol, Karachi, Taipei, and Sao Palo. Damn near everywhere. Likely kids playing games as always. These drones aren’t autonomous...they’re networked to kids or whomever all over the world. The Fort is shutting down the sites one by—”

“Got it! Don’t care! Do you have the source?”

“Yes, sergeant. Locking on now. Looks like a mobile base station, probably backpack, about four blocks to your north. We’ve got a lock.”

“Diablo 6, this is Nguyen, request immediate strike.”

“I’m tracking, Nguyen,” comes the CO’s reply from the expeditionary company command tent. “Approved. We’re firing now.”

Our patrol is a few miles from the company firm base by now, so we don’t hear the automatic 81 mm mortars fire. But it’s only about 25 seconds before we hear the other end of the storm. The soft “thugh-wump” of the internet protocol address guided mortars reverberates through the alleys and streets to our north. “Thugh-wump...thugh-wump, thugh-wump.” The drones start to hover or slowly descend to the ground, switching to auto-cast mode. The guided rounds from our M-43Es and the limited jamming of our angels take them down quickly.

“Good news is we got him. Some dude running down the back alley two blocks over was routing the control signals to the drones. Bad news is Russia Today and Brasilia TV are showing images of dead kids in the street. I’m already seeing news feeds about Americans killing civilians including children with indiscriminate mortar fire. We’ve just jumped to 125 million people actively live-following our patrol, increasing by nearly one million a second. Request permission to upload all of the live combat feeds

from the angels, sir.” Hawkins never shuts up, but he’s quick on the news feeds.

“Approved, and make sure the Fort is tracking,” the CO replies immediately. “Nguyen, I’m seeing no signs of synthetic bug corpses in your area, correct?”

“That’s right, sir.”

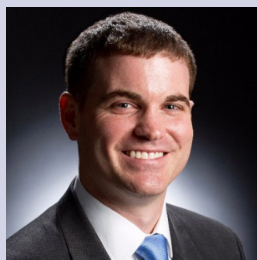
“Alright, bring your squad back to the firm base. You go any further, they’re just going to use this against us. I’m monitoring the Chinese feeds. They’re telling the same story we are. I’m going to send Sakash’s squad out in a few minutes to continue to the patrols further east to confirm there’re no synthetic bug corpses that way”

We trot back at a healthy 25 mile-an-hour clip, our mules and surviving angels keeping pace alongside and above us. By the time we get back the news feeds have finished covering what happened to us and moved on to the next crisis wherever in the world. I see images of our patrol, both real and doctored, passing across the various social feeds. The intel cell is already analyzing the effects on a half-dozen global financial indices while the Navy mini-ship drones are broadcasting from off the coast. Air

Force high altitude drones are in place now jamming the Russian cube-sats. We can’t shoot them down...they’re above the UN altitude convention and we don’t want this pissant crisis blowing up any further, but now that we’re locked on we sure can jam them for a few hours. Sakash’s squad will likely have better luck.

I check in on Al-Abadi in the medical wing of our company inflatable tent-plex. He’s fine. The electro-pulse hit his suit hard, shutting down not only his cooling but his airflow as well. He blacked out, but he’s not hurt enough to need to evacuate to the ships offshore. By the time I get back the rest of the squad’s soldiers have already finished their post-patrol cocktail, rehydrating and easing them off the e-pills so they can slow down and hopefully get some sleep. Before the cocktail has its full effect Nguyen debriefs the squad in her usual methodical and monotone way. We then hit the showers so we can bed down to get a few hours’ rest before we head out on the next one. Lucia is probably waiting for me to call in. She knows I’ve been back for a couple of hours at this point, and she knows I have my display on mute. ■

*Although this is a work of science fiction, the views and opinions expressed in the publication do not necessarily represent the views of the Johns Hopkins University Applied Physics Laboratory and should not necessarily be construed as an endorsement by Johns Hopkins.*



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