

# 1

DECEMBER 3, 2019

## NASA LANGLEY RESEARCH CENTER HAMPTON, VIRGINIA

I CAN'T SAY for sure when the century-old tunnel was sealed off like a tomb.

Probably around the same time it began popping up in 8-pitch type as a nondescript feature on utility site maps hardly anyone ever sees. Crammed with high-pressure steam pipes and other mechanicals, the section of tunnel designated 1111-A was at some point given the code name Yellow Submarine.

“Never publicly or in print,” I’m explaining to NASA police major Fran Lacey, miserably scuffing behind me on the steep, gloomy stairs. “Mid- to late ’70s is about right for when this might have occurred,” I add, as if she’s listening or cares. “That’s what I get if I factor in the data and do the math.”

Crickets is her response, the same one I’ve been getting, and I turn around, checking on her, fully aware she’s not talking back. May as well enjoy that while it lasts. Except I don’t. I feel bad for her. But that doesn’t mean I’ll cut her any slack. Nope.

PATRICIA CORNWELL

“In other words, in the Dark Ages, when you were coming along,” tossing in a dig whenever I can. “And way back then not even NASA had a glimmer about what was ahead. If they’d known, we wouldn’t have the problem I’m trying to make you handle sooner rather than later.”

I pause again for a response that isn’t coming. Our feet slowly thudding on concrete steps nosed with steel safety plates painted screaming yellow. Going down a few. Stopping every second or two as it gets warmer and stuffier the deeper we descend. More like steamy summer than the dead of winter, both of us clearing our throats and sweating.

“I’m guessing some dorky systems engineer or member of the intelligence community was to blame. A Beatles fan at any rate, and therefore most likely after 1968,” I continue to download information Fran couldn’t be less interested in right now.

Talking nonstop in rhythm to our descent. Feet thud-thudding. Another pause or two. Punctuated by the off-gassing of her loud exasperated sighs and coughs. Prompting me to turn around, finding her the same as last I looked, flipping me off with both middle fingers, messing with me the way she usually does. But not really. Because believe me when I say that nothing about this is funny to a legendary badass cop known for being afraid of nothing.

On permanent loan from Hampton PD, Fran oversees investigations for NASA Langley’s protective services. Or what’s essentially our police force of some 70 uniformed officers and a dozen special agents, all armed and federally sworn to ensure security and enforce the law on campus. In addition, she supervises NASA’s and the City of Hampton’s joint Marine, Aviation and Crime Scene Units. Plus our mobile response teams, riot squad and SWAT.

Not to mention providing executive protection for visiting VIPs. And coordinating with the military police on Langley Air Force Base, separated from our center by guard gates and an 8-foot-high fence topped with barbed wire. Suffice it to say, Fran isn’t someone to

## QUANTUM

dismiss, disrespect or underestimate. That doesn't mean I'm letting her off easy by offering empathy or the slightest hint about how much it secretly bothers me to put her through this ordeal. Or any. But if I'm really her investigative partner and closest ally and friend, then for me to give in to her problem would be the worst thing I could do. It would be selfish and dangerous. Worst case, it could be catastrophic.

"I'll take your profane sign language as a yes. You're doing okay," responding to her latest doubly offensive gesture, and it's pointless to react personally when she's distressed to the max.

"Shut up," she manages to gasp, and thankfully her current unpleasantness is predictable and for the most part inconsistent with who she is the rest of the time.

But extreme anxiety, no matter how buried or quiet, rarely makes anyone more cooperative or nicer. Her mop of dark hair plastered to her scowling brow beneath her cockeyed hard hat, her safety glasses constantly fogging up. Staring at her boots, watching every tentative step as she makes her way down a claustrophobic dusty stairwell that she's avoided like the plague in the past. And would continue to do so were it up to her. Fortunately, it isn't. Even if she outranks me. Technically.

"The reason I know, obviously, is their iconic album by that name didn't come out until then," I answer what she doesn't ask. "*Yellow Submarine*. We're all living on one, a metaphor for spaceship Earth, right? Which is appropriate considering what's down here, as you're about to see," I carry on as if oblivious to her fear of confined anything.

Including caves, orthopedic casts, subways, seat belts, handcuffs, bunkers, submarines and most of all, tunnels, and it's not that I'm insensitive. But as matters relate to her phobias, I'm her sponsor and never her enabler. Meaning I wasn't happy about her refusal to shadow me along this very route when I ran a routine network analysis inside the Yellow Submarine tunnel yesterday. A very important test. In fact, critical in light of current circumstances, and Fran would have none

PATRICIA CORNWELL

of it. She stopped answering my text messages or calls on the subject. She ducked and dodged. I worked without her.

Then, as synchronicity would have it, one of 1111-A's airlock motion sensors sent me an alert exactly 22 minutes ago, presenting me with the perfect opportunity to give Fran another chance. I made her an offer she couldn't refuse in front of the entire Langley Center directorate and its high-ranking guests, the NASA Protective Services and Hampton police chiefs.

Most of all, my former boss General Dick Melville, the commander of Space Force. And I anxiously rub my right thumb and index finger together. Feeling the scar. Remembering him doing the same only hours ago when I first encountered him at the briefing and he shook my hand. Checking my finger pad for that distinctive old injury, exploring its beveled topography like a stigmata. So subtle I'm still not certain it was intentional.

But I felt scrutinized as never before, and he also reacted oddly when the motion-detector alarm went off. When I say oddly, he didn't react at all. Just sat there stonily while I apologized profusely, explaining in front of everyone that Fran and I had to respond instantly.

Irony of ironies, the very vulnerability I'd been preaching about had a possible problem. The security of the Yellow Submarine may have been breached. Right now. In real time.

"If I didn't know better, I'd think you planned this," Fran managed to take a jab at me in front of our Mount Olympian audience.

Payback for leaving her little option but to save face by responding openly and reasonably to what she'd decided instantly and irrationally was a wild goose chase. On the spot and peeved, she was violently reluctant even if she didn't show it. Well, too darn bad, whether it turns out to be a false alarm or not, at long last Fran's along for the ride.

She's about to find out exactly what's inside the bricked-up section of tunnel running some 50 feet below buildings 1110 and 1111. For once she's going to take my warnings to heart about the two unassuming prewar government facilities on the outer limits of the campus,

## QUANTUM

where NASA keeps telecommunications, space operations, electromagnetic labs. And something else.

It's the "something else" she needs to understand fully and intuitively, or she can't possibly appreciate why this remote area of our campus isn't simply at risk. But as far as I'm concerned it's more vulnerable than all NASA centers and facilities combined when we have the volatile chemistry of our current political chaos added to the local meteorological and geographical circumstances.

Fran needs to know what to watch for if she doesn't want World War III. Because I probably won't be here to tell her. If all goes well, I won't be here to tell anyone.

00:00:00:00:0

THEN WHAT? Who's going to keep Major Lacey from turning into Major Chicken?

Suffering full-blown panic attacks that end with her in a fetal position, on a stretcher or being helped by firefighters back down a ladder. Not that I have the magic touch or cure. But I figured out from the start that when she decompensates, the best remedy is to talk nonstop.

To overwhelm her with information, distracting her from getting sucked in to her fear-biting paralyzing vortex. It's always worked like a charm when the job takes us into environments hostile to her. Which is most of them.

"Think of it as a wormhole leading into . . ."

"Wormhole bunglehole!"

". . . Either one of them leading into a parallel universe that dark matter is desperate to overtake," I may as well be speaking extraterrestrial. Glancing back at her, "You hanging in okeydoke?"

"Stop asking!" Out of breath and several paces behind, she's more congested and grumpy with each passing second.

PATRICIA CORNWELL

But I'm not letting her flee the scene. Doing what's best even if it pisses her off as I continue to make sure she's not hyperventilating, overheating, going into anaphylactic shock or who knows what. I consider it real progress that at least she's not taking the stairs sitting down one at a time. I really have seen her do that when frightened off her feet.

At the moment she's not quite that bad. But close enough, staring down at her steel-toe boots without a glance at where she's going. Not caring what or why. Not caring about anything except how stressed she feels. Following me down one shaky step at a time. And you'd think we were descending into Dante's hell of torments by the look on her face the deeper we get as she clutches the railing.

*You and your phobias. What's going to happen when I'm gone?*

"Oh boy, oh boy . . ." Not intending a word of it out loud. "Don't start with me!" Struggling to block out the steepness, the walls closing in.

"I'm not starting. But if I did?" My voice echoes as I pause on the stairs. "Look, I know how much you hate this, Fran, but it's for your own darn good. And I'm not letting you off the hook."

"You know what you can do with your hook!" Sniffing, eyes rheumy from her allergies kicking in harder, unable to grasp the importance.

And not because she's overworked and claustrophobic, both of which are true. The problem is she doesn't want to face the reason I'm insisting on a detailed tutorial about what I manage around here. Not just Building 1111 but the gestalt of science and policing in this age of hybrids and fusions, everything increasingly entangled and intertwined. Except she's not interested or paying attention, and I don't mean just now.

Fran doesn't want to deal with the fact that it was never the plan for me to stick around here forever. She's going to have to take over for me eventually, doesn't matter how she feels about it. Like my sister, Carme, says, "*Reality happens, Sisto.*" Only *reality* isn't the word she uses.

## QUANTUM

And *Sisto* isn't for publication, her secret pet name for me going back to infinity, as I like to say. A clever hybrid of *sister* and *Callisto*, our NASA parents naming their twin daughters after two of Jupiter's moons. Although Carme (pronounced *karma*) is actually considered more of an irregular satellite while my namesake is the second-largest moon after Ganymede. Everybody calls me Calli. And Carme is Carme unless they mispronounce it *Carm*. (Not to be confused with *charm*, let me add, in case you haven't met my firebrand not-exactly-matching bookend.)

When we were last together, she made me swear that if all goes as expected, I won't leave our NASA mom and dad or Langley or Fran or anyone in a lurch. Since then I've been making plans and taking care of what I can because statistically it's a 50-50 chance that my fighter-pilot twin and I will be called back to Houston any day. Intuitively, I'm giving us bigger chances than that, and suspect that by the New Year we'll be settled in Texas for the long haul.

Maybe in that lakefront neighborhood we like so much where we fantasized about keeping a small boat. Not even 15 minutes from Johnson Space Center, depending on traffic. But what I've always wished for me isn't something Fran and I can talk about easily now that my future is within reach. We've really not discussed what's next.

She doesn't want to acknowledge that what I intend is real. She refuses to face what it means beyond making occasional cracks and snipes about how preoccupied and on edge I supposedly am. That I'm a fussybudget. An overachieving royal pain who has no off switch or time for friends.

“. . . And then in 1975, the US government decided to use fiber-optic cables to link computers into a network for the first time,” my narration is going strong as I make my way down another stairwell. “This happened to be at the air force's classified facility in Colorado Springs. Cheyenne Mountain, my last honest job, like you're always saying.”

Until three years ago, I was a military police captain in charge of cyber investigations at what I think of as North America's Bat Cave, the

## PATRICIA CORNWELL

Cheyenne Mountain installation, built some 2,000 feet below ground to withstand an atom bomb. Explaining why I have an informed opinion about the wisdom of using a subterranean utility trench to create a test bed for fiber-optic telecommunications. But any choices made back in the good ole days of the Beatles and the Cold War were long before I was born.

Otherwise I would have quite a lot to say about the eventual risks of creating a quantum key distribution network in such a locale. And then running cables from it into the heart of Langley's recently opened supercomputing complex, the Katherine G. Johnson Computational Research Facility, named after the human computer who calculated trajectories virtually in her head for our earliest space flights.

No ribbon-cutting ceremony or anything else that's been in the news hints at the CRF's top secret importance. Had it been up to me, I would have removed 1111-A, the Yellow Submarine, from the mix. I would prohibit telecommunication cables, junction boxes and other equipment from being installed inside that or any utility tunnel.

Never on my most distracted day would I approve point-to-point links carrying high-speed data signals inside a confined underground space shared with rodents, reptiles and a miscellany of service people in and out.