MORE PRAISE FOR *NUKING THE MOON*

"Outlandish, informative, hilarious, and deeply terrifying, this book makes *Dr. Strangelove* feel like a heavily censored documentary."

—Robert Wade, co-screenwriter of *Casino Royale* and *Skyfall*

"Dr. Vince Houghton is smart—really smart—and doesn't suffer fools (or foolish plans) kindly. In *Nuking the Moon*, he hilariously skewers some of the military and intelligence community's weirdest, wackiest, and most outlandish plots, plans, and covert operations! From the story of the CIA's bugged kitty cat to tales of arming Chinese call girls with poisons, and blowing up the moon, it's a great read and highly recommended!"

—H. Keith Melton, intelligence historian and coauthor of *Spycraft*

"Vince Houghton is a fresh new voice who will have you laughing out loud at some of the serious yet hysterical false starts in the history of the intelligence community."

—Jonna Mendez, former CIA chief of disguise

"The Cold War wasn't just dangerous, it was also often bizarre, and sometimes even hilarious. Vince Houghton has put together an amazing compendium of schemes and plans that were once top secret—and for good reason. This is a compelling book, not only because of the light it sheds on a halfcentury of American secrets, but because it is a reminder that when human beings go to war—hot or cold—they can often be too clever for their own good."

—Tom Nichols, author of *The Death of Expertise*

"These are amazing tales, and readers may, despite Houghton's research to verify each project, be left pondering whether the book will be shelved among works of history or science-fiction novels. Possibly, however, *Nuking the Moon* best belongs with political science to remind us that when national survival is believed threatened, desperation and innovation become kindred spirits that can make the otherwise unimaginable become real."

—Robert Wallace, former director of the CIA's Office of Technical Service and coauthor of *Spycraft*

"Houghton mixes humor and irony with an espionage historian's eye for detail to make *Nuking the Moon* both entertaining and informative. The litany of bizarre schemes and harebrained ideas had me continually asking, 'What were they thinking?' From ideas like the acoustic cat to synthetic goat poop, and so many ideas related to the use of atomic weapons, I would laugh out loud if it weren't so scary. As a CIA veteran, I'm just glad that my name can't be found in its pages."

—John Sipher, former CIA chief of station and lead instructor at CIA's clandestine training school

NUKING THE MOON

And Other
Intelligence Schemes
And Military Plots Best Left
On The Drawing Board

VINCE HOUGHTON

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CONTENTS

INTRODUCTION: LEFT ON THE DRAWING BOARD

This is a book about desperation.

It's a word that has been so overused and misused that it has lost much of its impact. Too many stories about some local sports team "desperate" for a win, or some housewives "desperate" for … whatever that show was about. These pretenders have trivialized a word designed to be used only in the most extraordinary of circumstances. It should be a powerful word, reserved for the urgent and overwhelming feeling that one's life is at risk. It's for the truly existential threats (another misused word), to one's country, one's family, one's friends, or one's livelihood. When the stakes couldn't be higher and the options slimmer. To feel desperate is to believe there are no good options, that everything that has been tried, or could be tried, is destined for failure. Desperation leads us to consider ideas that would have been unfathomable under normal circumstances—because desperate people make desperate decisions.

This is also a book about innovation.

Creative thinking about how things work—and the possibilities of how things *could* work—has been the catalyst for the astonishingly dynamic technological transformation

of the past hundred years. From the advent of lighter-than-air flight to hypersonic aircraft, from bolt-action rifles to electromagnetic railguns, from ENIAC to quantum computing, from one poor freezing soldier in a trench listening to intercepted wireless messages to the NSA's supercomputers collecting the metadata of billions—brilliant people with innovative ideas continue to shape our world, and do it exponentially faster than the generations that came before.

But when innovation and desperation meet, trouble will usually follow. If necessity is the mother of invention, desperation is the drunk uncle.

Every so often, we are surprised when one of these ideas actually pans out. The U-2 and SR-71 spy planes—some of the most innovative aircraft ever designed—were a result of American desperation to see inside the Soviet Union. Nuclear power, computers, the internet, modern textiles, and personal encryption were all born out of a nation's desperate fear to keep pace with an imposing rival. Much of that history has been written before. Countless books have been published about the remarkable and successful technology developed over the last century by governments for national security needs.

But this is not one of them.

Most history books are full of stories of things that happened; this is a history book about why things *didn't* happen.

Here we will take an expansive look at projects, missions, operations, and technology that were seriously considered, but didn't make the grade. Some were ultimately deemed too risky, expensive, dangerous, ahead of their time—or even certifiably insane. Others were canceled merely because they were overtaken by events: The atomic bomb worked, the war ended, the plans were captured, other technology superseded.

Generally, history books use events of the past to make powerful arguments about peoples' motivations, personalities, and states of mind. And rightfully so—this is part of what history books are supposed to do. But I contend that the evaluation of historical *events* is not enough. It can be just as important to investigate policies, decisions, and technologies that were considered at the highest levels, but then abandoned. The *intent* of historical actors can be (and I argue *is*) just as instructive and illuminating as the outcome of their policies.

"Outcome history" is the traditional way of viewing historical events, but it leaves much to be desired. It has severe limitations, primarily because its lessons are predicated on things that cannot be accurately quantified: fate, luck, misfortune, whatever you want to call it. If the D-Day invasion of Normandy had failed because of a freak weather system, or a lucky shot from a German soldier that took out a key American leader on the beach (or any number of other misfortunate scenarios), would we think any less of Eisenhower's plan? Using outcomebased history: yes. And therein lies the problem. Intent can be a very powerful tool for historians.

So leave your historical hindsight at the door. Ignore the fact that these policies, technologies, programs, and missions were scrapped before they became "real." The outcome really doesn't matter here at all. That's why this book scorns the counterfactual—the game of "what if"—vilifies it, mocks it mercilessly. The counterfactual is our enemy and it has no place here.

Instead, all of these stories should have you saying, "What were they thinking?" The best way to approach this book is with an open mind toward how the decision makers were

approaching the problems facing them. In almost every case, those in power were *desperate* to do something (anything) to combat their adversaries. Thus, "What were they thinking?" is *exactly correct*—except I hope that you will be willing to truly embrace the question, and not see it as just a dismissive aside or a hasty pejorative. In all of these stories, very intelligent people were willing to do anything (or *just about* anything) to achieve or maintain national power. This resulted in extreme "outside the box" thinking—but not so extreme that it changes the fact that these were serious people making lifeanddeath decisions. Their *intent* is just as important as their actions, and that's why this task at hand matters: It offers a unique, unusual opportunity to put us (the reader, the historian) in the mindset of the historical figures, and to understand the unique and daunting challenges they faced.

In some cases, this gives us an unconventional perspective on familiar figures. You might never see historic figures such as Winston Churchill, John F. Kennedy, Fidel Castro, Franklin Roosevelt, or even Carl Sagan the same way again. In other cases, these stories resurface fascinating figures left in the dustbin of history, who might be household names had their ideas panned out.

The book is organized into four parts, each with its own theme, but all full of stories centered on the desperation that was the product of the sheer terror of World War II, or the ideological fervor and suspicion of the Cold War. In each case, the originators of these ideas truly believed their very existence was at stake. And their desperation led to some … interesting choices.

Part I focuses on our furry and feathered friends from the animal kingdom. You know how when a movie uses

animals—a *Babe the Sheep Pig,* a *Marley & Me,* a *Snakes on a Plane*—there's a disclaimer during the credits that says, "No Animals Were Harmed in the Making of This Film"? Well, that's not the case in part I. The animals in these stories were cut open, wired up, run over, set on fire, blown to pieces, dropped unconscious from thousands of feet, infected with biological pathogens, painted with caustic (and likely carcinogenic) paint, and shoved inside tactical nuclear weapons. All in the name of national security.

Part II centers on the secret world of covert and clandestine operations. The stuff that makes for exciting tales of espionage and intrigue: assassination attempts, special operations, secret missions, spies and spycraft, devious dealings, dastardly villains, doublecrossers, and deadly vixens. The fact that these operations never happened doesn't take anything away from the extraordinary plans developed for them. They are illogical, irrational, absurd, bizarre, ludicrous, and wild. But they are completely real.

Part III spotlights some of the most inspired and innovative technology of World War II and the Cold War. I'm talking about the *really* innovative stuff. The things so creative that they aren't just "outside the box," they are outside of the room, the building, the neighborhood, the city. Some of them were clearly ahead of their time. Some, we should hope, might *never* be in "their time."

Part IV takes things further. The development of nuclear weapons was, of course, the development of a new and novel technology. Yet it is disingenuous to consider the atomic bomb as "just another invention." The weaponization of nuclear energy was a watershed moment for the history of the Cold War. Humanity had created the most destructive technology

in the history of the human experience, but in many cases we had no clue what to do with our newfound power. Do we use it just like any other weapon? Or do we reserve it for just the most extraordinary circumstances, or even depend on just the psychological impact of having the weapons at our disposal? Can we even find ways to use nuclear weapons for *good*? What are some of the most ridiculous and asinine things we can possibly do with nuclear weapons? These questions were under constant debate during the Cold War. Some were addressed, some still remain unanswered today. I will be focusing on the last one.

Finally, while my research for this book depended on serious research into primary and secondary source literature, archival resources, expert interviews, and broadranging scientific, intelligence, foreign policy, and national security policy perspectives, my primary reason for writing this book is to help you learn and have fun. And to have some fun myself. Because these stories are extraordinary. So pull up a chair, and sit back and relax.

We're going for a ride.

PART I

ADVENTURES IN THE ANIMAL KINGDOM

1

ACOUSTIC KITTY

Acoustic Kitty is not just one story, but rather *stories*. You see, there are two different versions of this tale.

The first version has all of the necessary and wonderful elements of successful drama: great characters, extraordinary spectacle, rising action, a climax that shocks and delights, and a denouement for the ages.

The second version is, well … probably true.

But don't fret, the divergences between the stories are pretty trivial. The differences only make up a small part of the broader picture, and do nothing to change the most important, fundamental fact of the Acoustic Kitty story, which is:

> The CIA tried to make a covert listening device out of a housecat.

People have been secretly intercepting communications for centuries. One of the most prominent historical examples is the French *cabinet noir,* run by Cardinal Armand Jean du Plessis, the Duke of Richelieu and Fronsac (Cardinal Richelieu of *Three Musketeers* fame) in the early seventeenth

century. This "black room" or "black chamber" intercepted the letters of French citizens and foreigners suspected of conspiring against the king. The letters were secretly opened, read, resealed, and then sent to their intended recipient (who would never know what had happened in transit). More than one nefarious plot against king and country was foiled this way—and even some that hadn't yet reached the level of "nefarious." Richelieu didn't care if he trampled a liberty (or two). The protection of the crown was paramount: "If you give me six lines written by the hand of the most honest of men, I will find something in them which will hang him."

Skip ahead to the twentieth century, when the development of electronic communications inevitably lead to means for intercepting communications *with* electronics. Thus begins the age of the covert listening device—the "bug" or "wire." But 1940s and '50s listening devices hardly resembled the bugs from the movies, the ones where the hero gets the Mob boss to reveal where he's hidden the bodies, just before the cops bust in. Instead, they were soda-cansized monstrosities that could only be concealed in furniture or adequately large household appliances—lamps, comfy chairs, bookcases, and so on.

By the 1960s, some of the size issues had been resolved thanks to the natural evolution of electronics, but listening device technology still could not clear its most pressing hurdle: These bugs picked up everything. That might sound like a good thing. The more the better, right? No. When I say everything, I mean *everything*. A bug secretly placed on a park bench wouldn't just pick up the conversation of the people sitting on it. It would pick up dogs barking, birds chirping, traffic noise, cars honking, ambulance sirens, heavy

footsteps, heavy breathing, etc., masking the conversation and wasting the time of the poor operatives whose job it was to try (futilely) to make sense of whatever cacophony was recorded on the tape.

Think of what it feels like to try to have a conversation at a crowded bar, a busy restaurant, or a deafening rock concert. Even though the musician onstage is shredding a face-melting guitar solo, you and your friend can nevertheless have a reasonably understandable conversation. Sure, you are screaming into each other's faces from two inches away, but you can still make out what your friend is saying. This is because humans (and many animals) have a structure inside our inner ear known as the cochlea, and this is where something called transduction takes place—the conversion of energy from one form to another. In this case, the cochlea transduces sound waves into electrical impulses that our brains perceive as sound. Most importantly, this process allows our brain to differentiate between different kinds of sounds—we can focus on our friend's offer to go to the bar, as we are simultaneously inundated with 120 decibels of heavy metal mayhem.

In the 1960s, the engineers working for American intelligence tried, in vain, to develop an artificial cochlea for use in covert listening devices. After a time, they realized that the technology of the day was inadequate for such an ambitious undertaking. And who can blame them? The cochlea is ridiculously complicated, so much so that we didn't really understand its form and function until the late 1950s/early 1960s. Housed inside the cochlea is something called the basilar membrane, on which are found thousands upon thousands of hair cells, called stereocilia. The stereocilia at

specific locations react to specific frequencies of sound. Low frequencies are picked up by certain hairs, while high frequencies stimulate others. This is why some people with mild hearing loss can no longer hear very high- or low-pitched sounds—the stereocilia for those particular frequencies have been damaged, but the rest of the cochlea is good to go.

Understandably, this level of complexity was beyond the capabilities of even the world's greatest scientists and engineers of the 1960s—and the CIA had some of the very best, many of whom worked in a division that is today known as the Office of Technical Service (or OTS, at the time called the Technical Services Division, or TSD). The intricacy of the cochlea is the result of millions of years of evolution, while inventors and engineers of the time had just finished perfecting the Etch A Sketch, felttipped pens, AstroTurf, acrylic paint, and the audiocassette tape. We were still a couple of years away from the handheld calculator, electronic fuel injection for cars, and the first artificial heart (which, although way more important to us than the cochlea, is far less complicated). So give them a break. They did their best with what they had.

It's at this point that some scientist in CIA's TSD—unfortunately (for us, though perhaps fortunately for him) his name has been lost to history—decided to go in an entirely different direction. Instead of killing themselves trying to make an artificial cochlea, why didn't they take something that already has a perfectly well-functioning cochlea, and turn it *into* a listening device?

And thus, Project Acoustic Kitty—that is actually the official title—was born. But we aren't *quite* ready to tell the rest of the story. It wasn't, on the face of it, quite as crazy a plan as

it first appeared. Along with the CIA's Office of Research and Development (ORD), the scientists and engineers of TSD understood the very real potential usefulness of a feline secret agent. In many major cities, cats are ubiquitous. They come and go as they please, and no one thinks twice about a lone cat taking a stroll in a public park. Or even sliding through the gates of an embassy compound. It's the perfect cover for a perfect clandestine operation.

But as we all know, cats can be difficult customers. They tend to do whatever they want, when they want, and how they want, regardless of human pleading, soft cooing, bribery with treats, or even threats. They are famously impossible to train, or even herd. Of course, the scientists and engineers at TSD and ORD understood this as well, but they had real reason to think that recent developments in brain science had paved the way for an attempt at the seemingly impossible. Part of this renaissance in neuroscience was a result of the natural progression of scientific discovery that defined the early to midtwentieth century. This is a time in history where science was redefining our understanding of, well, everything.

Part of it was due to the CIA's own inhouse research. For the decade and a half leading up to Acoustic Kitty, the CIA had been pushing the envelope of what was "possible"—from applied science, to technology, to medical research, to even the parapsychological, much of this under the broad auspices of a program known as MKULTRA.

MKULTRA earned its welldeserved notoriety due to experiments in "mind control," testing a bevy of hallucinogenic drugs, most notably LSD, on both witting and unwitting test subjects. Further criticism has been targeted at the program's research and manufacture of what can only be described as

biological and chemical weapons for CIA operational use in assassinations and other "executive actions." But what many people don't realize is that MKULTRA was actually multiple programs—about 150—under the single umbrella of the code name, and many of these subprojects had nothing to do with biological toxins, chemicals, or psychedelic drugs. Admittedly, we have no idea about most of the subprojects that made up MKULTRA. We only really know about a handful of them. The majority of the MKULTRA documents were (deliberately) destroyed decades ago, and unless someone kept a secret copy somewhere, we will never know the full extent of this particular chapter of the CIA's history.

We *do* know that at least two of the subprojects centered on the use of electronic brain stimulation and the control of animals. According to a CIA report in late 1960, one of these, Subproject 94, demonstrated the "feasibility" of electronic implants and the behavioral manipulation of "several species" of animals. There is no specific mention of cats, but the results of the experiments were enough to spur on "development of future Agency applications." One of these "applications" is the feline hero of our story, Acoustic Kitty.

Remember when I said there were two versions of this story? Up to this point, the stories are more or less the same. Here, however, is where they begin to veer off in vastly different directions. We'll take them one at a time, and then bring them back together at the end—which is, as far as anything that matters, essentially the same for both. The middle? Not so much.

The first version comes courtesy of Bob Wallace, who was the director of the OTS in the late 1990s and early 2000s.

Bob briefly wrote about Acoustic Kitty in his book *Spycraft,* and even though I've read this book several times, I always try to get more out of him in person. On several occasions I've asked Bob about Acoustic Kitty, and his response is basically the same each time: a sardonic grin, a sly chuckle, and then a look of resigned acceptance when he realizes that I'm not just going to go away. I also think that Bob would much rather talk about some of the extraordinary accomplishments of TSS/TSD/OTS. But I don't want to talk about their integral part in the development of the U-2 spy plane, which first saw service in the 1950s, but was so revolutionary it still flies today, or their role in the rescue of six American diplomats from Tehran after the ouster of the shah (dramatized in the movie *Argo*). I want to talk about cats. According to Bob, the CIA's scientists and technicians understood from the getgo that this project firmly fell into the "high risk" category. Inserting electronics into a living organism was not as routine as it is today (this is several years before the first heart transplant). Living bodies are not welcoming spaces for electronics. They are hot and they are wet. They have natural defense systems, which fight against foreign intruders. Through millions of years of evolution, the cat has been designed to specification. Everything inside a cat is there for an important biological reason. There's not a whole lot of extra room for implants, wires, and batteries. It wouldn't do the CIA much good if the cat listening device worked to perfection but it blew its cover—or damaged its equipment—by constantly clawing or licking at itself, or if it couldn't walk straight because it was laden with the extra weight of the CIA's electronics package.

With this in mind, the CIA did all it could to ensure the

humane treatment (relatively speaking, of course) of the test cat, a gray-and-white female of undocumented breed. A professional veterinarian, working in a clean, sterile operating environment within an animal hospital, conducted the procedure. A threequarterinch audio transmitter, developed by TSD and an outside contractor, was embedded at the base of the cat's skull. You know the loose skin just below the head of a cat, where you (or its mother) can pick it up and carry it around without causing it any pain? The perfect place for the audio transmitter. The small, wirelike microphone was—of course—placed in the ear canal, to allow for easy and fluid conduction of sound.

The antenna, made of very fine wire, needed to extend beyond the insulated inside of the cat for it to work effectively. But it couldn't just stick straight up into the air. To ensure it remained hidden, it was woven into the cat's fur, down along her spine.

After the operation, Acoustic Kitty was placed inside a recovery area, as the CIA techs anxiously waited for the anesthesia to wear off. Once back on her feet, the cat was put through a series of tests. To the scientists' and technicians' satisfaction, the microphone worked as advertised, and provided a usable signal. However, there were other issues. Despite their best efforts at training the cat to move consistently according to mission, results in this area were "inconsistent" and the operational utility of Acoustic Kitty was "questionable," even after several weeks of exercises and tests. For some reason (obvious to anyone who has ever interacted with a cat), the CIA was having trouble training a cat to behave. Because the results failed to improve, and the CIA was hesitant to deploy its new robocat in an operational