

**Lex Fridman Podcast #420 - Annie Jacobsen: Nuclear War, CIA, KGB, Aliens, Area 51,**

**Roswell & Secrecy**

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**Lex Fridman**

The following is a conversation with Annie Jacobsen, an investigative journalist, Pulitzer Prize finalist and author of several amazing books on war, weapons, government secrecy, and national security, including the books titled "Area 51", "Operation Paperclip", "The Pentagon's Brain", "Phenomena", "Surprise, Kill, Vanish", and her new book, "Nuclear War". This is the Lex Fridman podcast. To support it, please check out our sponsors in the description. And now, dear friends, here's Annie Jacobsen. Let's start with an immensely dark topic: nuclear war. How many people would a nuclear war between the United States and Russia kill?

**Annie Jacobsen**

I'm coming back at you with a very dark answer and a very big number. And that number is 5 billion people.

**Lex Fridman**

You go second by second, minute by minute, hour by hour what would happen if the nuclear war started? There's a lot of angles from which I would love to talk to you about this. First, how would the deaths happen in the short term and the long term?

**Annie Jacobsen**

To start off, the reason I wrote the book is so that readers like you could see in appalling detail just how horrific nuclear war would be. And as you said, second by second, minute by minute. The book covers nuclear launch to nuclear winter. I purposely don't get into the politics that lead up to that or the national security maneuvers or the posturing or any of that. I just want people to know nuclear war is insane. And every source I interviewed for this book, from Secretary of Defense, all retired, nuclear sub-force commander, STRATCOM commander, FEMA director, etc. On and on and on, nuclear weapons engineers. They all shared with me the common denominator that nuclear war is insane. First millions, then tens of millions, then hundreds of millions of people will die in the first 72 minutes of a nuclear war. And then, comes nuclear winter where the billions happen from starvation. And so, the shock power of all of this is meant for each and every one of us to say, "Wait, what?" This actually exists behind the veil of national security. Most people do not think about nuclear war on a daily basis, and yet hundreds of thousands of people in the nuclear command and control are at the ready in the event it happens.

**Lex Fridman**

But it doesn't take too many people to start one.

**Annie Jacobsen**

In the words of Richard Garwin, who was the nuclear weapons engineer who drew the plans for the Ivy Mike thermonuclear bomb, the first thermonuclear bomb ever exploded in 1952.

Garwin shared with me his opinion that all it takes is one nihilistic madman with a nuclear arsenal to start a nuclear war. And that's how I begin the scenario.

### **Lex Fridman**

What are the different ways it could start? Literally, who presses a button and what does it take to press a button?

### **Annie Jacobsen**

The way it starts is in space, meaning the US Defense Department has a early warning system, and the system in space is called SBIRS. It's a constellation of satellites that is keeping an eye on all of America's enemies so that the moment an ICBM launches, the satellite in space - and I'm talking about 1/10 of the way to the moon, that's how powerful these satellites are in geo-sync. They see the hot rocket exhaust on the ICBM in a fraction of a second after it launches, a fraction of a second. And so, there begins this horrifying policy called launch-on-warning, right? And that's the US counterattack. Meaning the reason that the United States is so ferociously watching for a nuclear launch somewhere around the globe is so that the nuclear command and control system in the US can move into action to immediately make a counterstrike. Because we have that policy, launch-on-warning, which is exactly like it says. It means the United States will not wait to absorb a nuclear attack. It will launch nuclear weapons in response before the bomb actually hits.

### **Lex Fridman**

So the president, as part of the launch-on-warning policy, has 6 minutes - I guess can't launch for 6 minutes, but at 6-minute mark from that first warning, the president can launch.

### **Annie Jacobsen**

And that was one of the most remarkable details to really nail down for this book when I was reporting this book, and talking to Secretary of Defenses, for example, who are the people who advise the president on this matter, right? You say to yourself, "Wait a minute. How could that possibly be?" So, let's unpack that. So, in addition to the launch-on-warning concept, there's this other insane concept called Sole Presidential Authority. And you might think, in a democracy that's impossible, right? You can't just start a war. Well, you can just start a nuclear war if you are the commander in chief, the President of the United States. In fact, you're the only one who can do that. And we can get into later why that exists. I was able to get the origin story of that concept from Los Alamos, they declassified it for the book. But the idea behind that is that nuclear war will unfold so fast only one person can be in charge. The president. He asks permission of no one. Not the Secretary of Defense, not the chairman of the Joint Chiefs of Staff, not the US Congress. So, built into that is this extraordinary speed you talk about, the 6-minute window. And some people say, "That's ridiculous. How do we know that 6 minute window?" Well, here's the best hitting the nail on the head statement I can give you, which is in President Reagan's memoirs, he refers to the

6-minute window and he says - he calls it irrational, which it is. He says, "How can anyone make a decision to launch nuclear weapons based on a blip on a radar scope." His words. "To unleash Armageddon." And yet, that is the reality behind nuclear war.

### **Lex Fridman**

Just imagine sitting there, one person, because a president is a human being, sitting there, just got the warning that Russia launched. You have 6 minutes. I meditate on my immortality every day. And here, you would be sitting and meditating, contemplating not just your own mortality, but the mortality of all the people you know, loved ones. Just imagining. What would be going through my head is all the people I know and love personally, and knowing that there'll be no more, most likely. And if they somehow survive, they will be suffering and will eventually die. I guess the question that kept coming up is how do we stop this? Is it inevitable that it's going to be escalated to a full-on nuclear war that destroys everything? And it seems like it will be. It's inevitable. In the position of the President, it's almost inevitable that they have to respond.

### **Annie Jacobsen**

I mean, one of the things I found shocking was how little apparently most presidents know about the responsibility that literally lays at their feet. You may think through this 6-minute window, I may think through this 6-minute window. But what I learned, for example, former Secretary of Defense, Leon Panetta was really helpful in explaining this to me because before he was SecDef, he served as the director of the CIA. And before that, he was the White House Chief of Staff. And so, he has seen these different roles that have been so close to the President. But he explained to me that when he was the White House Chief of Staff for President Clinton, he noticed how President Clinton didn't want to ever really deal with the nuclear issue because he had so many other issues to deal with. And that only when Panetta became Secretary of Defense, he told me, did he really realize the weight of all of this, because he knew he would be the person that the president would turn to were he to be notified of a nuclear attack. And by the way, the launch-on-warning, it's the ballistic missile seen from outer space by the satellite. And then, there also must be a second confirmation from a ground radar system. But in that process, which is just a couple minutes, everyone is getting ready to notify the president. And one of the first people that gets notified by NORAD or by STRATCOM or by NRO, these different parties that all see the early warning data, one of the first people that's notified is the Secretary of Defense as well as the Chairman of the Joint Chiefs of Staff, because those two together are going to brief the president about, "Sir, you have 6 minutes to decide." And that's where you realize the immediacy of all of this is so counter to imagining the scenario. And again, all the presidents come into office, I have learned, understanding the idea of deterrence, this idea that we have these massive arsenals of nuclear weapons pointed at one another ready to launch so that we never have nuclear war. But what we're talking about now is, what if we did? What if we did? And what you've raised is this really spooky, eerie subtext of the world right now because many of the nuclear armed nations are in direct conflict with other

nations. And for the first time in decades, nuclear threats are actually coming out of the mouths of leaders. This is shocking.

### **Lex Fridman**

So deterrence, the polite, implied assumption is that nobody will launch. And if they did, we would launch back and everybody would be dead. But that assumption falls apart completely, the whole philosophy of it falls apart once the first launch happens, then you have 6 minutes to decide, "Wait a minute. Are we going to hit back and kill everybody on earth? Or do we turn the other cheek in the most horrific way possible?"

### **Annie Jacobsen**

Well, when nuclear war starts, there's no battle for New York or battle for Moscow. It's just literally - it was called in the Cold War, "push-button warfare". But in essence, that is what it is. Let's get some numbers on the table if you don't mind, right? Because when you're saying like, "Wait a minute. We're just hoping that it holds." Right? Let's just talk about Russia and the US, the arsenals that are literally pointed at one another right now. The United States has 1,770 nuclear weapons deployed, meaning those weapons could launch in as little as 60 seconds and up to a couple minutes. Some of them on the bombers might take an hour or so. Russia has 1,674 deployed nuclear weapons. Same scenario. Their weapons systems are on par with ours. That's not to mention the 12,500 nuclear weapons amongst the nine nuclear armed nations. But when you think about those kinds of arsenals of just between the United States and Russia, and you realize everything can be launched in seconds and minutes, then you realize the madness of mad, this idea that no one would launch because it would assure everyone's destruction. Yes. But what if someone did? And in my interviews with scores of top tier national security advisors, people who advise the president, people who are responsible for these decisions if they had to be made, every single one of them said it could happen. They didn't say this would never happen. And so, the idea is worth thinking about because I believe that it pulls back the veil on a fundamental security that if someone were to use a tactical nuclear weapon, "Well, it's just an escalation." It's far more than that.

### **Lex Fridman**

So to you, the use of a tactical nuclear weapon, maybe you can draw the line between a tactical and a strategic nuclear weapon. That could be a catalyst. That's a very difficult thing to walk back from.

### **Annie Jacobsen**

Oh, my God. Almost certainly. And again, every person in the national security environment will agree with that, certainly on the American side. Strategic weapons, those are big weapons systems. America has a nuclear triad. We have our ICBMs, which are the silo-based missiles that have a nuclear warhead in the nose cone, and they can get from one continent to the other in roughly 30 minutes. Then we have our bombers, B-52s and

B-2s, that are nuclear capable. Those take travel time to get to another continent. Those can also be recalled. The ICBMs cannot be recalled or redirected once launched.

**Lex Fridman**

That one is a particularly terrifying one. So land launched missiles, rockets with a warhead, can't be recalled.

**Annie Jacobsen**

Cannot be recalled or redirected. And speaking of how little the presidents generally know, as we were talking a moment ago, President Reagan, in 1983, gave a press conference where he misstated that submarine launched ballistic missiles could be recalled. They cannot be recalled. Here's the guy in charge of the arsenal if it has to get let loose, and he doesn't even know that they cannot be recalled. So, this is the kind of misinformation and disinformation. UN Secretary General, Antonio Guterres, recently said when he was talking about the conflicts rising around the world, he said, "We are one misunderstanding, one miscalculation away from nuclear Armageddon."

**Lex Fridman**

So, just to linger on the previous point of tactical nukes. You were describing strategic nukes, land launched bombers, submarine launched. What are tactical nukes?

**Annie Jacobsen**

That's the triad, right? And we have the triad, and Russia has the triad. Tactical nuclear weapons are smaller warheads that were designed to be used in battle. And that is what Russia is sort of threatening to use right now. That is this idea, that you would make a decision on the battlefield in an operational environment to use a tactical nuclear weapon. You're just upping the ante. But the problem is that all treaties are based on this idea of no nuclear use, right? You cannot cross that line. And so, what would happen if the line is crossed is so devastating to even consider. I think that the conversation is well worth having among everyone that is in a power of position. As the UN Secretary General said, "This is madness." Right? "This is madness. We must come back from the brink. We are at the brink."

**Lex Fridman**

Can we talk about some other numbers? You mentioned the number of warheads. Land launched, how long does it take to travel across the ocean from the United States to Russia, from Russia to the United States, from China to the United States, approximately how long?

**Annie Jacobsen**

When I was writing an earlier book on DARPA, the Pentagon Science Agency, I went to a library down in San Diego, called the Geisel Library, to look at Herb York's papers. Herb York was the first chief scientist for the Pentagon for DARPA, then called ARPA. And I had been

trying to get the number from the various agencies that be to answer your - what is the exact number and how do we know it? And does it change? And as technology advances, does that number reduce? All these kinds of questions. And no one will answer that question on an official level. And so, much to my surprise, I found the answer in Herb York's dusty archive of papers. And this is information that was jealously guarded. I mean, it's not necessarily classified, but it certainly wasn't out there. And I felt like, "Wow. Herb York left these behind for someone like me to find." He wanted to know the answer to your question as the guy in charge of it all. So, he hired this group of scientists who then, and still are in many ways, the supermen scientists of the Pentagon, and they're called the JASON Scientists. Many conspiracies about them abound. I interviewed their founder and have interviewed many of them. But they whittled the number down to seconds specifically for Herb York. And it goes like, because this is where my jaw dropped. And I went, "Wow." So, 26 minutes and 40 seconds from a launch pad in the Soviet Union to the East Coast. And it happens in three phases. Very simple. And interesting to remember, because then suddenly all of this makes more sense. Boost phase, mid-course phase and then terminal phase, okay? Boost phase, five minutes. That's when the rocket launches. So, you just imagine a rocket going off the launch pad and the fire beneath it. Again, that's why the satellites can see it. Now it's becoming visual, now it makes sense to me. Five minutes. And that's where the rocket can be tracked. And then imagine learning, "Wait a minute. After five minutes, the rocket can no longer be seen from space. The satellite can only see the hot rocket exhaust." Then the missile enters its mid-course phase, 20 minutes. And that's the ballistic part of it, where it's flying up at between 500 and 700 miles above the earth and moving very fast and with the earth until it gets very close to its target. And the last 100 seconds are terminal phase. It's where the warhead re-enters the atmosphere and detonates. 26 minutes and 40 seconds. Now in my scenario, I open with North Korea launching a one megaton nuclear warhead at Washington DC. That's the nihilistic madman maneuver. That's the bolt out of the blue attack that everyone in Washington will tell you they're afraid of. And North Korea has a little bit different geography. And so, I had MIT Professor Emeritus Ted Postol do the math, 33 minutes from a launch pad in Pyongyang to the East coast of the United States. You get the idea, it's about 30 minutes. But hopefully now that allows readers to suddenly see all this as a real - you almost see it as poetry, as terrible as that may sound. You can visualize it and suddenly it makes sense. And I think the sense-making part of it is really what I'm after in this book. Because I want people to understand, on the one hand, it's incredibly simple, it's just the people that have made it so complicated.

### **Lex Fridman**

But it's one of those things that can change all of world history in a matter of minutes. We just don't, as a human civilization, have experience with that. But it doesn't mean it'll never happen. It can happen just like that.

**Annie Jacobsen**

I mean, I think what you're after, and I couldn't agree more with, is why is this fundamentally annihilating system, a system of mass genocide? As John Rubel in the book refers to it. Why is it still exist? We've had 75 years since there've been two superpowers with the nuclear bomb. So, that threat has been there for 75 years, and we have managed to stay alive. One of the reasons why so many of the sources in the book agreed to talk to me, people who had not previously gone on the record about all of this, was because they are now approaching the end of their lives. They spent their lives dedicated to preventing nuclear World War III. And they'll be the first people to tell you we're closer to this as a reality than ever before. And so, the only bright side of any of this is that the answer lies most definitely in communication.

**Lex Fridman**

So, there's a million other questions here. I think the details are fascinating and important to understand. So one, you also say nuclear submarines - you mentioned about 30 minutes - 26-33 minutes. But with nuclear submarines, that number can be much, much lower. So, how long does it take for a warhead missile to reach the east coast of the United States from a submarine?

**Annie Jacobsen**

Just when you thought it was really bad, and then you realize about the submarines. I mean, the submarines are what are called second-strike capacity. Submarines were described to me this way, they are as dangerous to civilization - And let me say a nuclear-armed, nuclear-powered submarine is as dangerous to civilization as an asteroid. They're unstoppable. They are unlocatable, the former Chief of the Nuclear Submarine Forces, Admiral Michael Connor, told me it's easier to find a grapefruit-sized object in space than a submarine under the sea. These things are like hell machines, and they're moving around throughout the oceans, ours, Russia's, China's, maybe North Korea's constantly. And we now know they're sneaking up to the east and west coast of the United States within a couple hundred miles. How do we know that? Why do we know that? Well, I found a document inside of a budget that the defense department was going to Congress for more money recently and showed maps of precisely where these submarines - how close they were getting to the eastern seaboard.

**Lex Fridman**

Wat, wait, wait. So, nuclear subs are getting within 200 miles?

**Annie Jacobsen**

Couple hundred miles, yes. They weren't precise on the number, but when you look at the map -



**Lex Fridman**

Couple hundred.

**Annie Jacobsen**

Yeah. And that's when you're talking about under 10 minutes from launch to strike.

**Lex Fridman**

Undetectable.

**Annie Jacobsen**

And they're undetectable. The map making is done after the fact because of a lot of underwater surveillance systems that we have. But in real time, you cannot find a nuclear submarine. And just the way a submarine launches goes 150 feet below the surface to launch its ballistic missile. I mean, it comes out of the missile tube with enough thrust that the thrusters, the boot, they ignite outside the water and then they move into boost. And so, the technology involved is just stunning and shocking. And again, trillions of dollars spent so that we never have a nuclear war. But my God, what if we did.

**Lex Fridman**

As you write, they're called the handmaidens of the apocalypse. What a terrifying label. I mean, one of the things you also write about, so for the land launched ones, they're presumably underground. So the silos, how long does it take to go from pressing the button to them emerging from underground for launch? And is that part detectable or it's only the heat?

**Annie Jacobsen**

What's interesting about the silos, America has 400 silos, right? We've had more. But we have 400, and they're underground, and they're called Minutemen after the Revolutionary War heroes. But the joke in Washington is they're not called Minutemen for nothing, because they can launch in one minute. The president orders the launch of the ICBMs, ICBM stands for Intercontinental Ballistic Missile. He orders the launch, and they launch 60 seconds later. And then, they take 30 some odd minutes to get to where they're going. The submarines take about 14 or 15 minutes from the launch command to actually launching. And that has to do, I surmise, with the location of the submarine, its depth. Some of these things are so highly classified and other details are shockingly available if you look deep enough, or if you ask enough questions, and you can go from one document to the next, to the next and really find these answers.

**Lex Fridman**

Not to ask top secret questions, but to what degree do you think the Russians know the locations of the silos in the US and vice versa?

**Annie Jacobsen**

Lex, you and I can find the location of every silo right now.

**Lex Fridman**

Oh, no.

**Annie Jacobsen**

They're all there. And before they were there on Google, they were there in Maps because we're a democracy and we make these things known. Now, what's tricky is that Russia and North Korea rely upon what are called road mobile launchers. Russia has a lot of underground silos. All of the scenario takes you through these different facilities that really do exist, and they're all sourced with how many weapons they have and their launch procedures and whatnot. But in addition to having underground silos, they have road mobile launchers, and that means you just have one of these giant ICBMs on a 22 axle truck that can move stealthily around the country so that it can't be targeted by the US Defense Department. We don't have those in America, because presumably the average American isn't going to go for the ICBM road mobile launcher driving down the street in your town or city, which is why the Defense Department will justify we need the second-strike capacity capability, the submarines, because - the wonky stuff that is worth looking into, if you really dig the book and are like, "Wait a minute." It's all footnoted where you can learn more about how these systems have changed over time. And why, more than anything, it's very difficult to get out of this catch-22 conundrum that we need nuclear weapons to keep us safe. That is the real enigma. Because the other guys have them, right? And the other guys have - the other guys have them. And the other guys have more sinister ways of using them, or at least that's what the nomenclature out of the Pentagon will always be when anyone tries to say, "We just need to really think about full disarmament."

**Lex Fridman**

You've written about intelligence agencies. How good are the intelligence agencies on this? How much does CIA know about the Russian launch sites, and capabilities, and command and control procedures, and all of this and vice versa?

**Annie Jacobsen**

I mean, all of this, because it's decades old, is really well known. If you go to the Federation of American Scientists, they have a team led by a guy called Hans Kristensen who runs what's called the Nuclear Notebook. And he and his team every year are keeping track of this number of warheads on these number of weapon systems. And because of the treaties, the different signatories to the treaty all report these numbers. And of course, the different intelligence community, people are keeping track of what's being revealed honestly and reported with transparency and what is being hidden. The real issue is the new systems that Russia is working on right now, and that will lead us - we are moving into an era whereby the threat of actually having new weapon systems that are nuclear capable is very real because

of the escalating tensions around the world. And that's where the CIA would guess is doing most of its work right now.

**Lex Fridman**

So most of your research is looking at the older versions of the system, and presumably there's potentially secret development of new ones, hopefully not -

**Annie Jacobsen**

Which violates treaties.

**Lex Fridman**

Yes.

**Annie Jacobsen**

So, yes. That is where the intelligence agencies - but at a point, it's overkill - literally and figuratively. People are up in arms about these hypersonic weapons. Well, we have a hypersonic weapons program, Falcon. Google "Blackswift". This is Lockheed's doing. DARPA exists to create the vast weapon systems of the future. That is its job. It has been doing that since its creation in 1957. I would never believe that we aren't ahead of everyone. Call me over - informed or naive, one or the other. That would be my position because DARPA works from the chicken or the egg scenario. That once you learn about something, once you learn Russia's created this Typhoon submarine, which may or may not be viable, it's too late if you don't already have one.

**Lex Fridman**

We'll probably talk about DARPA a little bit. One of the things that makes me sad about Lockheed, many things make me sad about Lockheed, but one of the things is because it's very top secret, you can't show off all the incredible engineering going on there. The other thing that's more philosophical, DARPA also, is that war seems to stimulate most of our, not most, but a large percent of our exciting innovation in engineering. But that's also the pragmatic fact of life on earth is that the risk of annihilation is a great motivator for innovation, for engineering, and so on. But yes, I would not discount the United States in its ability to build the weapons of the future, nuclear included. Again, terrifying. Can you tell me about the nuclear football, as it's called?

**Annie Jacobsen**

I think Americans are familiar with the football, at least anyone who follows national security concepts because it's a satchel. It's a leather satchel that is always with a military aide in Secret Service nomenclature. That's the mil aide. And he's trailing around the president 24/7, 365 days a year, and also the vice president, by the way, with the ability to launch nuclear war in that 6-minute window all the time. That is also called the football, and it's always with the president. To report this part of the book, I interviewed a lot of people in

the Secret Service that are with the president and talk about this. And the Director of the Secret Service, a guy called Lou Merletti, told me a story that I just really found fascinating. He was also in charge of the president's detail, President Clinton this was, before he was director of the Secret Service. And he told me the story about how, he said, "The football is with the president at all times, period." They were traveling to Syria, and Clinton was meeting with President Assad. And they got into an elevator, Clinton and the Secret Service team, and one of Assad's guys was like, "No." About the mil aide. And Lou said it was like a standoff because there was no way they were not going to have the president with his football in an elevator. And it sums up. For me anyways, you realize what goes into every single one of these decisions. You realize the massive system of systems behind every item you might just see in passing and glancing on the news as you see the mil aide carrying that satchel. Well, what's in that satchel? I really dug into that to report this book.

**Lex Fridman**

What is in that satchel?

**Annie Jacobsen**

Okay. So well, okay. First of all, people always say, "It's incredibly classified." I mean, people talk about UFOs. "It's incredibly -" I mean, come on, guys. That is nothing burger. You want to know what's really classified? What's in that football? What's in that satchel? But the PEAD, Presidential Emergency Action Directives, those have never been leaked. No one knows what they are. What we do know from one of the mil aides who spoke on the record, a guy called Buzz Patterson, he describes the President's orders. So if a nuclear war has begun, if the president has been told, "There are nuclear missiles, one or more, coming at the United States, you have to launch in a counterattack. The red clock is ticking. You have to get the blue impact clock ticking." He needs to look at this list to decide what targets to strike and what weapon systems to use. And that is what is on, according to Buzz Patterson, a piece of laminated plastic. He described it like a Denny's menu. And from that menu, the president chooses targets and chooses weapon systems.

**Lex Fridman**

And it's probably super old school, like all top secret systems are, because they have to be tested over and over and over and over and over, probably -

**Annie Jacobsen**

Yes, and it's non-digital.

**Lex Fridman**

Non-digital. It might literally be a Denny's menu from hell.

**Annie Jacobsen**

Right. And meanwhile, I learned this only in reporting the book. There is a identical black book inside the STRATCOM bunker in Nebraska. So three command bunkers are involved when nuclear war begins. There's the bunker beneath the Pentagon, which is called the National Military Command Center. Then there is the bunker beneath Cheyenne Mountain, which everyone has or many people have heard of because it's been made famous in movies. That is a very real bunker. And then there is a third bunker, which people are not so familiar with, which is the bunker beneath Strategic Command in Nebraska. And so it's described to me this way, the Pentagon bunker is the beating heart, the Cheyenne Mountain bunker is the brains, and the STRATCOM bunker is the muscle. The STRATCOM commander will receive word from the president, "Launch orders." And then directs the 150,000 people beneath him what to do from the bunker beneath STRATCOM. He gets the orders, then he has to run out of the building and jump onto what's called the doomsday plane. We'll get into that in a minute. Let me just finish the - I mean, but again -

**Lex Fridman**

No, this is good. Alright.

**Annie Jacobsen**

- these are the details. These are the systematic sequential details that happen in seconds and minutes. And reporting them, I never cease to be amazed by what a system it is. A follows B. It's just numerical, right?

**Lex Fridman**

Yeah, but as we discuss this procedure, each individual person that follows that procedure might lose the big picture of the whole thing. I mean, especially when you realize what is happening that almost out of fear, you just follow the steps.

**Annie Jacobsen**

Yep. Or okay, so imagine this. Imagine being the president, and you got that 6 minute. You're looking at your list of strike options. You're being briefed by your chairman of the Joint Chiefs of Staff and your SecDef. And this other really spooky detail. In the STRATCOM bunker, in addition to the nuclear strike advisor who can answer very specific questions, if the president's like, "Wait a minute, why are we striking that and not that?" There's also a weather officer. And this is the kind of human detail that kept me up at night because that weather officer is in charge of explaining to the president really fast, how many people are going to die and how many people are going to die in minutes, weeks, months, and years from radiation fallout.

**Lex Fridman**

Because a lot of that has to do with the weather system.

**Annie Jacobsen**

Yes. Yes. And so these kinds of the humanness balanced out with the mechanization of it all, it's just really grotesque.

**Lex Fridman**

So the doomsday plane from STRATCOM?

**Annie Jacobsen**

Yeah.

**Lex Fridman**

What's that? Where's it going? What's on it?

**Annie Jacobsen**

Right. It's - it - okay, ready?

**Lex Fridman**

Yeah.

**Annie Jacobsen**

It's going to fly in circles. That's where it's going. It's flying in circles around the United States of America so that nuclear weapons can be launched from the air after the ground systems are taken out by the incoming ICBMs or the incoming submarine-launched ballistic missiles. This has been in play since the '50s. These are the contingency plans for when nuclear war happens. So again, going back to this absurd paradox, nuclear war will never happen. Mutual assured destruction, that is why deterrence will hold. Well, I found a talk that the deputy director of STRATCOM gave to a very close-knit group where he said, "Yes, deterrence will hold. But if it fails, everything unravels." And think about that word unravels. And the unraveling is the doomsday plane launches. The STRATCOM commander jumps in. He's in that plane, he's flying around the United States, and he's making decisions because the Pentagon's been taken out. At 9/11, by the way, Bush was in the doomsday plane.

**Lex Fridman**

And Bush had to make decisions quickly, but not as quickly as he would've needed to have done if there's a nuclear launch.

**Annie Jacobsen**

I mean -

**Lex Fridman**

6 minutes.

**Annie Jacobsen**

- it basically happens in three acts. There's the first 24 minutes, the next 24 minutes, and the last 24 minutes. And that is the reality of nuclear weapons.

**Lex Fridman**

What is the interceptor capabilities of the United States? How many nuclear missiles can be stopped?

**Annie Jacobsen**

I was at a dinner party with a very informed person, somebody who really should have known this, and this is what I was considering writing and reporting this book. And he said to me, "Oh Annie, that would never happen because of our powerful interceptor system." Okay. Well, he's wrong. Let me tell you about our powerful interceptor system. First of all, we have 44 interceptor missiles total, period, full stop. Let me repeat, 44. Earlier we were talking about Russia's 1,670 deployed nuclear weapons. How are those 44 interceptor missiles going to work? And they also have a success rate of around 50%. So they work 50% of the time. There are 40 of them in Alaska, and there are four of them at Vandenberg Air Force Base in Santa Barbara. And they are responsible at about 9 minutes into the scenario. After the ICBM has finished that 5-minute boost phase we talked about, now it's in mid-course phase, and the ground radar systems have identified, yes, this is an incoming ICBM. And now the interceptor missiles have to launch. It's essentially shooting a missile with a missile. Inside the interceptor, which is just a big giant rocket, in its nose cone, it has what's called the aptly named Exoatmospheric Kill Vehicle. There's no explosives in that thing. It's literally just going to take out the warhead ideally with force. So one of them is going mach 20. I mean, the speeds at which these two moving objects hurtling through space are going is astonishing. And the fact that interception is even possible is really remarkable, but it's only possible 50% of the time.

**Lex Fridman**

Is it possible that we only know about 44, but there could be a lot more?

**Annie Jacobsen**

No, impossible. That I would be willing to bet.

**Lex Fridman**

And how well-tested are these interceptors?

**Annie Jacobsen**

Well, that's where we get the success rate that's around 50% because of the tests. And actually the interceptor program is, are you ready for this? It's on strategic pause right now, meaning the interceptor missiles are there, but developing them and making them more effective is on strategic pause because they can't be made more effective. People have

these fantasies that we have a system like the Iron Dome. And they see this in current events, and they're like, "Oh, our interceptors would do that." It's just simply not true.

**Lex Fridman**

Why can't an Iron Dome-like system be constructed for nuclear warheads?

**Annie Jacobsen**

We have systems I write about called the THAAD system, which is ground-based, and then the Aegis system, which is on vessels. And these are great at shooting down some rockets, but they can only shoot them one at a time. You cannot shoot the mother load as it's coming in. Those are the smaller systems, the tactical nuclear weapons. And by the way, our THAAD systems are all deployed overseas, and our Aegis systems are all out at sea. And again, reporting that, I was like, "Wait, what? You have to really hunker down. Are we sure about this?" People really don't want to believe this is an actual fact. After 9/11, Congress considered putting Aegis missiles and maybe even THAAD systems along the West Coast of the United States to specifically deal with the threats against nuclear-armed North Korea. But it hasn't done so yet. And again, you have to ask yourself, "Wait a minute. This is insanity." One nuclear weapon gets by any of these systems, and it's full-out nuclear warfare. So that's not the solution. More nuclear weapons is not the solution.

**Lex Fridman**

I'm looking for a hopeful thing here about North Korea. How many deployed nuclear warheads does North Korea have? So does the current system, as we described it, the interceptors and so on, have a hope against the North Korean attack? The one that you mentioned people are worried about.

**Annie Jacobsen**

So North Korea has 50, let's say 50 nuclear weapons right now. Some NGOs put it at more than 100. It's impossible to know because North Korea's nuclear weapons program has no transparency. They're the only nuclear-armed nation that doesn't announce when they do a ballistic missile test. Everyone else does. No one wants to start a nuclear war by accident. So if Russia is going to launch an ICBM, they tell us. If we're going to launch one, and I'm talking test runs here, with a dummy warhead, we tell them. Not North Korea. That's a fact. So we're constantly up against the fear of North Korea. In the scenario, I have the incoming North Korean one-megaton weapon coming in, and the interceptor system tries to shoot it down. So there's not enough time. And this, by the way, I ran through by all generals from the Pentagon who run these scenarios for NORAD and confirmed all of this as fact. This is the situation. So in the scenario, I have the nuclear ICBM coming in. The interceptor missiles try to shoot down the warhead. The capability is not like what's called shoot and look. There's not enough time to go, "And we're going to try to get it. We missed it. Okay, let's go for another one." So you have to go - so in my scenario, we fire off four, which is about what I was told, one to four, because you're worried about the next one that's going to come in.



You're going to use up 10% of your missile force, of your interceptor force on one, and all four miss. And that's totally plausible.

### **Lex Fridman**

Right. How likely are mistakes, accidents, false alarms taken as real, all this kind of stuff in this picture? So we've assumed the detection works correctly. How likely is it possible, anywhere? You described this long chain of events that can happen. How possible is it just to make a mistake, a stupid human mistake along the way?

### **Annie Jacobsen**

There have been at least six known absolute, oh my God, close calls, how, thank God this happened, type scenarios. One was described to me with an actual personal participant, former Secretary of Defense, Bill Perry, and he described what happened to him in 1979. He was not yet Secretary of Defense. He was the Deputy Director of the Research and Engineering, which is a big job at the Pentagon. And the night watch fell on him essentially. And he gets this call in the middle of the night. He's told that Russia has launched not just ICBMs, but submarine-launched ballistic missiles are coming at the United States. And he is about to notify the president that the 6-minute window has to begin when he learns it was a mistake. The mistake was that there was a training tape with a nuclear war scenario. We haven't even begun to talk about the nuclear war scenarios that the Pentagon runs. An actual VHS training tape had been incorrectly inserted into a system at the Pentagon. And so this nuclear launch showed up at that bunker beneath the Pentagon and at the bunker beneath STRATCOM because they're connected, as being real. And then it was like, oh, whoops. It's actually a simulation test tape. And Perry described to me what that was like, the pause in his spirit and his mind and his heart when he realized, "I'm about to have to tell the president that he needs to launch nuclear weapons." And he learned just in the nick of time that it was an error. And that's one of five examples.

### **Lex Fridman**

Can you speak to maybe is there any more color to the feelings he was feeling? What's your sense? And given all the experts you've talked to, what can be said about the seconds that one feels once finding out that a launch has happened, even if that information is false information?

### **Annie Jacobsen**

For me personally, that's the only firsthand story that I ever heard because it's so rare and it's so unique. And most people in the national security system, at least in the past, have been loath to talk about any of this. It's the sacred oath. It's taboo. It's taboo to go against the system of systems that is making sure nuclear war never happens. Bill Perry was one of the first people who did this. And a lot of it, I believe, at least in my lengthy conversations with him, we had a lot of Zoom calls over COVID when I began reporting this. And he had a lot to do with me feeling like I could write this book from a human point of view and not just

from the mechanized systems. Because, and I only lightly touch upon this because it's such a fast sweeping scenario, but Perry, for example, spent his whole life dedicated to building weapons of war only later in life to realize this is madness. And he shared with me that it was that idea about one's grandchildren inheriting these nuclear arsenals and the lack of wisdom that comes with their origin stories. When you're involved in it in the ground up, apparently it has perhaps you're a different kind of steward of these systems than if you just inherit them, and they are pages in a manual.

### **Lex Fridman**

People forget. You mentioned the nuclear war scenarios that the Pentagon runs. I'd love to - what do you know about those?

### **Annie Jacobsen**

I mean, again, they are very classified. I mean, it was interesting coming across levels of classification I didn't even know existed. ECI, for example, is exceptionally controlled information. But the Pentagon nuclear war gaming scenarios, they're almost all still classified. One of them was declassified recently, if you can call it that. I show an image of it in the book, and it's just basically almost entirely redacted. And then there'll be a date, or it'll say, "Phase one." And that one was called Proud Prophet. But what was incredible about the declassification process of that is it allowed a couple of people who were there to talk about it, and that's why we have that information. And I write about Proud Prophet in the book because it was super significant in many ways. One, it was happening right - in 1983, it was an insane moment in nuclear arsenals. There were 60,000 nuclear weapons. Right now there's 12,500. So we've come a long way, baby, in terms of disarmament. But there were 60,000. And by the way, that was not the ultimate high. The ultimate high was 70,000. This is insane. And Ronald Reagan was president, and he orders this war game called Proud Prophet, and everyone that mattered was involved. They were running the war game scenarios. And what we learned from his declassification is that no matter how nuclear war starts, there was a bunch of different scenarios, with NATO involved, without NATO, all different scenarios. No matter how nuclear war starts, it ends in Armageddon. It ends with everyone dead. I mean, this is shocking when you think about that coupled with the idea that all that has been done in the 40 some odd years since is, okay, let's just really lean in even harder to this theoretical phenomena of deterrence. Because that's all it is, it's just a statement, Lex. Deterrence will hold. Okay. Well, what if it doesn't? Well, we know from Proud Prophet what happens if it doesn't.

### **Lex Fridman**

So almost always, so there's no mechanisms in the human mind and the human soul that stops it in the governments that we've created. The procedure escalates always.

**Annie Jacobsen**

I mean, here's a crazy nomenclature, jargon thing for you. Ready? Escalate to deescalate. That's what comes out of it. Think about what I just said. Escalate to deescalate. So someone strikes you with a nuclear weapon, you're going to escalate it. General Hyten recently said he was STRATCOM commander. He was saber-rattling with North Korea during COVID, and he said, "They need to know if they launch one nuclear weapon, we launch one. If they launch two, we launch two." But it's actually more than that. They launch one, we launch 80. That's called escalate to deescalate. Pound the you know what out of them to get them to stop.

**Lex Fridman**

But to make a case for that, there is a reason to the madness because you want to threaten this gigantic response. But when it comes to it, the seconds before, there is still a probability that you'll pull back.

**Annie Jacobsen**

Which brings us to the most terrifying facts that I learned in all of that, and that has to do with errors. Not errors of like we spoke about a minute ago with a simulation test tape. I'm talking about if one madman, one nihilistic madman were to launch a nuclear weapon as I write in this scenario, and we needed to escalate to deescalate. We needed to send nuclear weapons at, let's say North Korea as I do in my scenario. Well, what is completely unknown to 98% of the planet is that not only do the Russians have a very flawed satellite system so that they cannot interpret what is happening properly, but there is an absolutely existential flaw in the system, which Secretary of Defense Leon Panetta confirmed with me, which is that our ICBMs do not have enough range. If we launch a counterattack against, say, North Korea, our ICBMs must fly over Russia. They must fly over Russia. So imagine saying, "Oh, no, no. These 82 warheads that are going to actually strike the Northern Korean peninsula are not coming for you, Russia." Our adversary right now that we're saber-rattling with. "Just trust us." And that is where nuclear war unfolds into Armageddon. And that hole in national security is shocking. And as Panetta told me, no one wants to discuss it.

**Lex Fridman**

And if one nuclear weapon does reach its target, I presume communication breaks down completely, or there's a high risk of breakdown of communication.

**Annie Jacobsen**

Well, let's back up. We are both presumptuous to assume that communication could even happen prior to, and let me give you a very specific example. During the Ukraine war, if perhaps you remember, I think it was in November of 2022. News reports erroneously stated that a Russian rocket, a Russian missile had hit Poland, a NATO country. It turned out to be a mistake, but for several hours, this was actually the information that was all over the news, breaking news. 36 hours later, the Chairman of the Joint Chiefs of Staff, General Mark

Milley, gave a press conference and talked about this and admitted that he could not reach his Russian counterpart during those 36 hours. He could not reach him. How are you going to not have an absolute Armageddon-like furor with nuclear weapons in the air if people can't get on the phone during a ground war?

**Lex Fridman**

I'd like to believe that there's people in major nations that don't give a damn about the bullshit of politics and can always just pick up the phone. Very close to the top, but not at the very top, and just cut through the bullshit of it in situations like this.

**Annie Jacobsen**

I hope that's true. I doubt it is, and let me tell you why. Most, and neither you nor I are political, from what I gather. So I just write about POTUS, President of the United States. You have no idea what my politics are because they shouldn't matter. No one should be for nuclear war, or no one should be for national insecurity. Yes, you want to have a strong nation. But once you get into politics, then you're talking about sycophants. And the more a political leader becomes divisive, becomes polemic, the more his platform is predicated on hating the other side, either within his own country or with alleged enemy nations. The more you surround yourself, as we see in the current day with sycophants, with people who will tell you not only what they think you want - defense with people who will tell you not only what they think you want to hear, but will help them to hold onto power. So you don't have wise decision makers. Long gone are the days where we had presidents who had advisors on both sides of the aisle. That's really important, because you want to have differing opinions. But as things become more viperous, both here in the United States and in nuclear armed nations, all bets are off at whether your advisors are going to give you good advice.

**Lex Fridman**

Who are the people around the President of the United States that give advice in this 6-minute window? How many of them just, maybe you could speak to the detail of that, but also to the spirit of the way they see the world. How many of them are warmongers? How many of them are kind of big picture, peace, humanity type of thinkers?

**Annie Jacobsen**

Well, again, we're talking about that 6-minute window, so it's not exactly like you can, let me put a pot of coffee on and really tell me what you think and we can strategize here, right? You have your SecDef and your chairman, maybe the vice chairman. We haven't even begun to talk about the fact that at the same time, these advisors also have a parallel concern, and that's called continuity of government. So while they're trying to advise on the nuclear counterstrike in response to the incoming nuclear missile, they have to be thinking, "How are we going to keep the government functioning when the missiles start hitting, when the bombs start going off?" And that is about getting yourself out of the Pentagon, let's say.

Getting yourself to one of these nuclear bunkers that I write about at length in the book. So how much can you ask of a human, right? Because it comes down to a human. Secretary of Defense is a human. Imagine that job while trying to advise the president. And then there's also a really interesting term which I learned about called jamming the president, which is often understood in Washington that the military advisors would, we don't know if this is legit, we've never seen it put to the test, but jamming the president means the military advisors are going to push for a really aggressive counter attack immediately. And again, you're the president who's not really been paying attention to this because he has many other things to deal with. Speed is not conducive to wisdom.

**Lex Fridman**

Can you speak to the jamming the president? So your sense is the advisors would by default be pushing for aggressive counter attack.

**Annie Jacobsen**

That is a term in sort of the national security nuclear command and control historical documentation that many of the people that you might call the more dovish type people are worried about, that the more hawkish people, the military advisors, are going to be jamming the president to make these decisions about which targets. Not if, but what.

**Lex Fridman**

The argument will be about which targets, not about if.

**Annie Jacobsen**

Yes. Yes.

**Lex Fridman**

I hope that even the warmongers would at this moment - because what underlies the idea of you wanting to go to war? It's power. It's like wanting to destroy the enemy and be the big kid on the block. But with nuclear war, it just feels like that falls apart. Do you think warmongers actually believe they can win a nuclear war?

**Annie Jacobsen**

Well, you've raised a really important question that we looked at the historical record for that answer. Because astonishingly, all of this began, like when Russia first got the bomb in 1949, the powers that be, and I write about them in the book is in a setup for the moment of launch. It's called How We Got Here. And you see, and I cite declassified documents from some of these early meetings where nuclear war plans were being laid out. And absolutely back in the 1950s the generals and the admirals that were running the nuclear command and control system believed that we could fight and win a nuclear war despite hundreds of millions of people dying. This was the prevailing thought. And only over time did the kind of concept come into play that no, we can never have a nuclear war. It's the famous Gorbachev

and Reagan joint statement. "A nuclear war cannot be won and must never be fought." But before that, many people believed that it could be won, and they were preparing for that.

### **Lex Fridman**

Not to be political and not to be ageist, but do cognitive abilities and all that kind of stuff come into play here? So if so much is riding on the president, is there tests that are conducted? Is there regular training procedures on the president that you're aware of? Do you know?

### **Annie Jacobsen**

I don't think that has anything to do with ageism. I think it's an earnest question, a really powerful one. And if people were to ask that question of themselves or their sort of dinner party guests or their family around the dinner table guests, you might come to a real good conclusion about how bad our political system is and how bad our presidential candidates are. Because why on earth there would be two candidates, one of whom has cognitive problems and the other of whom has judgment problems? These are the two biggest issues with the nuclear launch, judgment and cognition. And so where's the young-ish, thoughtful, forward looking, wise, dedicated civil servant running for president? I know that sounds fantastical, but I wish it weren't.

### **Lex Fridman**

So that's one of the things that you really think about when voting for president is this scenario that we've been describing, these 6 minutes. Imagine the man or woman sitting there 6 minutes waiting for the pot of coffee.

### **Annie Jacobsen**

But I think about that issue with any war. I mean, prior to writing *Nuclear War: A Scenario*, I previously wrote six books on military and intelligence programs designed to prevent nuclear war. And I believe the president as commander in chief should be of the highest character possible. Because the programs, the wars that we have fought since World War II have all been - how many octogenarian sources have I interviewed? I'm talking about Nobel Laureates and weapons designers and spy pilots and engineers in general. They've all said to me with great pride, "We prevented World War III, nuclear World War III." But that idea that the commander in chief and everyone within the national security apparatus should be making really good decisions about war. It's the oldest cliché in the world that the wars are fought by the young kids. It's not a cliché; it's true. And so the character part about the president should be in play whether we're thinking about nuclear war or any war, in my opinion.

### **Lex Fridman**

Well, I agree with you first of all, but it feels like with nuclear war, one person becomes exponentially more important. With regular war, the decision to go to war or not, advisors

start mattering more. There's judgment issues. You could start to make arguments for more leeway in terms of what kind of people we elect. It seems like with nuclear war, there's no leeway. It's like one person can resist the jamming the president force, the warmongers all the calculation in considering what are the errors, the mistakes, the missiles flying over Russia, the full dynamics of the geopolitics going on in the world, consider all of humanity, the history of humanity, the future of humanity, all of it just loaded in to make a decision. Then it becomes much more important that your cognitive abilities are strong and your judgment abilities against powerful wise people just as a human being are strong. So I think that's something to really, really consider when you vote for president. But to which degree is it really on the president versus to the people advising?

### **Annie Jacobsen**

Oh no, it's on the president. The president has to make the call. And that 6-minute window happens so fast. I mean, the president is going to be being moved for part of that time. The Secret Service is going to be up against STRATCOM. STRATCOM saying, "We need the launch orders," and the Secret Service is going to be saying, "We need to move the president." So it's not as much that he's delegating the issues; it's more like the issue is being postponed. Because there is only one issue, for the president to say, "These targets." For him to choose from the Denny's like menu, "Okay, this is what we're going to go with." And then this astonishing thing happens. The president takes out his wallet. He has a card in it that's colloquially called the biscuit, and that card with the codes matches up an item in the briefcase in the football that then is received by an officer underneath the Pentagon in that bunker. It's a call and response, Lex. It's like alpha zeta, that's it. And then back so that the individual in the bunker realizes they are getting the command from the president. And then that order is passed to STRATCOM. And STRATCOM, the commander of STRATCOM, and I interviewed a former commander of STRATCOM, commander of STRATCOM then follows orders, which is he delivers the launch orders to the nuclear triad, and what's done is done.

### **Lex Fridman**

What would you do if you were the commander of STRATCOM in that situation? What would you do? Because I think my gut reaction right now, if you just throw me in there, I would refuse orders.

### **Annie Jacobsen**

Okay, so good question. I asked that exact question to one of my very helpful sources on the book, Dr. Glen McDuff, who is at Los Alamos and who for a while was the classified - they have a museum that's classified within the lab, and he was the historian in charge of it. He's a nuclear weapons engineer. He worked on Star Wars during the Reagan era. And he does a lot having to do with the history of Los Alamos. By the way, because I've reported on nuclear weapons for 12 years now, and Oppenheimer movie had a very, to me, positive impact on Los Alamos' transparency with people like me. They had a real willingness to share

information. I think before perhaps they were on their heels feeling they needed to be on the defensive, but now they're much more forthcoming. They were super helpful. I can tell you the origin story of the football, which they declassified for the book. But I asked this question to Dr. Glen McDuff in a different manner. I said, "Is there a chance that the STRATCOM commander would defy orders?" And he said, "Annie, you have a better chance winning Powerball."

**Lex Fridman**

Why do you think? What's his intuition behind that?

**Annie Jacobsen**

You don't wind up as STRATCOM commander unless you are someone who follows orders. You follow orders.

**Lex Fridman**

You don't think there's a deep humanity there? Because his intuition is about everything we know so far, but this situation has never happened in the history of earth.

**Annie Jacobsen**

You're raising a really tricky, interesting conundrum here. Because during COVID, when President Trump and the leader of North Korea were kind of locked in various relationships with one another, good, bad, threatening, non-threatening, friendly; just bananas, you might say, not presidential behavior. If you were someone watching C-SPAN like I do, nerding out on what STRATCOM was actually saying about all this, you noticed that STRATCOM commanders were speaking out publicly to Congress more so than ever I had ever seen before. And this issue came up, would you defy presidential orders? So the caveat I would say to McDuff's answer of easier to win the Powerball is that if the commander of STRATCOM interpreted the president's behavior to be unreliable, to be non-presidential, then dot dot dot. But now you're into some really radical territory.

**Lex Fridman**

I mean, fundamentally, it feels like just looking at all the presidents of the United States in my lifetime, it feels like none of them are qualified for this 6 minutes. I could see as being the commander of STRATCOM being like, "This guy?" Basically respecting no president. I know you're supposed to, commander in chief, but in this situation - I mean everybody, Bush, Obama, Trump, Biden. If I was a commander of STRATCOM, I'd be like, "What does this guy know about any of this?" I would defy orders. I mean, in this situation, when the future of human civilization hangs in the balance, to be the person that says, "Yes, launch," no matter what, I just can't see a human being on earth being able to do that in the United States of America. That's a hell of a decision. Like, this is it. That's it.



**Annie Jacobsen**

That's it. Well, but now you've raised a great important presentation essentially, because what you're saying is, "People, be aware." Be aware of why you're voting, or why certain individuals are being escalated to even being able to run for president. What does that mean? Why are people in America not more involved? As citizens do we have a responsibility for that? Because you've opened up the door for people to understand, okay, the ultimate thing is the nuclear launch decision. So if a person can't be trusted with that, everything unravels from there.

**Lex Fridman**

Also, I want to look up who's the commander of STRATCOM now. Speaking of which, you've interviewed a lot of experts for this book. Is there some commonalities about the way, you've talked about this a little bit, but in the way they see this whole situation? What scares them the most about this whole system and the whole possibility of nuclear war?

**Annie Jacobsen**

I first learned about nuclear weapons from a guy called Al O'Donnell, who appears in my earlier books, because I interviewed him for over a period of four and a half years because he was an engineer who actually wired nuclear bombs in the 1950s. He was a member of the Manhattan Project in 1946. Worked on Operation Crossroads, the first explosions of nuclear bombs after the war ended, after World War II ended, and went on to arm, wire, and fire 186 out of the 200 some odd atmospheric nuclear tests that the United States did before this was banned. I learned from him the power of these weapons. And I learned from him this very almost nationalistic idea about how important it was to have nuclear weapons. And while I learned a lot about his human side, I also saw the side of him that was very Cold War warrior. So he was kind of the first. And then, I don't know, there've been 100 people that have been directly involved in nuclear weapons along the way. Billy Waugh, who was my main sort of central figure in a book I wrote about the CIA's paramilitary called Surprise, Kill, Vanish. And Waugh HALO jumped a tactical nuclear weapon into the Nevada test site with a small team. Almost unknown to anyone, right? Only recently declassified. And so his position was like, "Tactical nuclear weapons may end up being used." I'm trying to speak here to the scope of different people I have interviewed over the years. And what has happened is as I've gotten closer to the present day, in arrears, there seems to be a growing movement from some of these Cold warriors off the position of, "Nuclear weapons make us great and strong," toward "Something must be done to reduce this threat."

**Lex Fridman**

How much do you know, in the same way that you know about the United States, how much do you know about the Russian side? Maybe the Chinese side, India and Pakistan, all of this? How their thinking differs, perhaps?

**Annie Jacobsen**

Well, for that, you want to go to the experts. So for Russia, for example, there's a guy called Pavel Podvig who is probably the West's top expert on Russian nuclear forces. He works in parallel with the U. N. He also studied in Moscow. So my information comes from him. You do all the footwork to know what questions to ask, and then you take the very specific questions to him. And I learned from him about how the Russian command and control goes down. And it's very similar to ours, because America and Russia have been at sort of nuclear dueling with one another for 75 years now. And so everything we have, they have, with the exception of we have a great satellite system and they have a super flawed one. Theirs is called Tundra. And even Pavel Podvig admitted that there's serious flaws in Tundra. The Russian satellite system, for example, can mistake sunlight for flames, can mistake clouds for a nuclear launch. This is a fact. What was interesting in interviewing him was also this recent very, very dangerous shift in Russian nuclear policy, which is this: Many Russian experts will tell you that Russia has always maintained that it never had a launch on warning policy. Now, I don't know if I believe that's true, but I'm just telling you what they say. And this is coming from the generals, the Cold War generals in Soviet Russia saying, "Oh, no, no, no. We would wait." They were kind of playing the noble warrior. "We would wait to absorb a nuclear attack until we launched." Okay? So many Americans experts will tell you that that's just posturing and propaganda. But that was their official position, and that changed just two years ago when Putin gave a speech and he said that their position had changed, that they will no longer wait to absorb an attack. That once they learn of, how did he phrase it? He called it like the trajectory of the missiles, which is a way of, we're talking about parody, the same way we see the missile coming over in Midcourse. Putin made that same statement, and said, "We would launch."

**Lex Fridman**

What do you know of the way Putin thinks about nuclear weapons and nuclear war? Is it just something to allude to in a speech? Or do you think he contemplates the possibilities of nuclear war?

**Annie Jacobsen**

I don't know, but if I had to guess it would go like this. I would look at his background, and he comes from the intelligence world. My experience in interviewing old timers who've spent decades working for the CIA or even NRO or NSA, I know the way they think from having spent hundreds of hours interviewing them. And then I know the way that military men think, and it's very different. Putin's not a military person per se; he's an intelligence officer. So what would concern me there if I had to guess about his mindset has to do with paranoia. Most intelligence officers must have a degree of healthy paranoia, or they're going to wind up dead. And so that's not a great quality to have.

**Lex Fridman**

You would be more trigger-happy perhaps. So you would be more prone to respond to erroneous signals.

**Annie Jacobsen**

And you'd be suspicious, and you can see that now. There's such a incredible distrust and sort of real conflict between Russia, between its leader and NATO, between its leader and all of the West. And then that is fueled by his closest advisors. From the statements they have made that I've read in translation, they seem to be fostering that same idea that NATO really has it in for Russia. America really has it in. And that is so dangerous and disheartening.

**Lex Fridman**

And perhaps makes it less likely that the president would pick up the phone and talk to the other president.

**Annie Jacobsen**

Or that the close advisors near the president would make that happen.

**Lex Fridman**

You were talking about the procedure with the football. Is there any concern for cyber attacks? For security concerns at every level here, false signals, errors, shutting down the channels of communication through cyber attacks, all that kind of stuff?

**Annie Jacobsen**

To answer those questions, I interviewed a number of people, but most specifically General Touhill, who was Obama's cyber chief. He was actually America's first cyber chief. The nuclear command and control system and really the triad functions on analog systems. It functions on old school systems. If there's not digital interface, you can't hack into it. So most of the issues that I raise in the book have to do with what happens to cyber after a nuclear attack? What happens to cyber in the minutes after a bomb, a nuclear weapon strikes America, and how that impacts the ability for people to communicate with one another? That's when chaos takes control.

**Lex Fridman**

Well, let's talk about it. So God forbid if a nuclear weapon reaches its target, what happens? Perhaps you could say what you think would be the first target hit. Would it be the Pentagon?

**Annie Jacobsen**

I was told by many people I interviewed that the biggest fear in Washington, DC is what's called a bolt out of the blue attack. That's an unwarned nuclear attack against Washington,

DC. The target would be the Pentagon, and that's what I begin the scenario with. I reported in graphic, horrifying detail what happens.

**Lex Fridman**

Yes, you did.

**Annie Jacobsen**

Because I don't know what's worse, me writing that all out, or the fact that it's all documented by the Defense Department. I mean, they have been documenting the effect of nuclear weapons on people and animals and things since the earliest days of the Cold War. And all of the details I pull are from these documents like The Effects of Nuclear Weapons. And again, this document was the original information, the original data, and this document come from Hiroshima and Nagasaki. It was all classified. And then it was built upon by those 200 some odd atmospheric nuclear weapons tests we did. We're talking about millimeters and inches. We're talking about the Defense Department knowing that, oh, seven and a half miles out the upholstery on cars will spontaneously combust. The pine needles will catch on fire. They will start more fires. You have all kinds of mayhem and chaos happening based on reported facts from observations. And this is really shocking and grotesque at the same time.

**Lex Fridman**

So one warhead reaches the Pentagon, everybody in the Pentagon perishes.

**Annie Jacobsen**

180 million degrees. The fireball on a one megaton nuclear weapon is 19 football fields of fire. Think about that. Nothing remains. Nothing remains.

**Lex Fridman**

There's then a radius where people die immediately, and then there's people that are dead when found, and then there's people that will die slowly in centric rings.

**Annie Jacobsen**

And again, rings defined by Defense scientists. But before that, the bomb goes off. Then there's this blast wave that's like several hundred miles an hour pushing out like a bulldozer, knocking everything down, bridges, buildings. I mean, you can read FEMA manuals about what the rubble will be like. You're talking about 30 feet deep rubble as the buildings go over, 6, 7, 8, 10 miles out. That speaks nothing of the mega fires that will then ensue. So once all these people die, and third degree radiation burns. Did you even know there was such a thing as fourth degree radiation burns? We're talking about the wind ripping the skin off people's faces many miles out. And then you have a sucking action. Many people are familiar with what the nuclear mushroom cloud looks like. Its stem actually creates, and again, this is from physicists who advise the Defense Department on this, the sucking up into the

nuclear stem, 300 mile an hour winds. You're talking about people miles out getting sucked up into that stem. When you see the mushroom cloud, Lex, in a nuclear war, that would be people. Those are like the remnants of people and of things in the cloud; 30, 40 mile wide mushroom cloud blocking out the sun, and that speaks nothing of the radiation poisoning that follows.

### **Lex Fridman**

And then the power grid goes out. Basically everything we rely on in terms of systems in our way of life goes out. You write, "Those who somehow managed to escape death by the initial blast, shockwave, and firestorm suddenly realize an insidious truth about nuclear war, that they're entirely on their own." Here begins a "fight for food and water." I mean, that is a wake-up call on top of a wake-up call that we go back to a kind of primitive fight for survival, each on their own.

### **Annie Jacobsen**

And by the way, those details were given to me by Obama's FEMA director, Craig Fugate. FEMA is the agency in America that plans for nuclear war. And what Fugate said to me was, "Annie, we plan for asteroid strikes. These are called low probability but high consequence events." And FEMA is the organization that when there's a hurricane or an earthquake or a flood, FEMA steps in and they do what's called population protection planning. They take care of people. And what Fugate told me is after a nuclear strike, after a bolt out of the blue attack, he used those terms, there is no population protection. Everyone's dead. And he means that metaphorically, but also kind of more literally. Because he just said at that point, "You just hope that you stocked Pedialyte."

### **Lex Fridman**

What do you think happens to humans? How does human nature manifest itself in - how does human nature manifest itself in such conditions? Do you think brutality will come out? People will, just for survival, will steal, will murder, will.

### **Annie Jacobsen**

I can't imagine that not happening. I think that's why people love post-apocalyptic television shows and films because they see that. And then, of course, there's always one great charismatic person who's trying to restore morality. These are great narratives that people like to tell themselves in the world of science fiction. But what we're dealing with is science fact in this scenario. It is meant to terrify people into realizing, wait a minute, this is a conversation that absolutely should be had, while it can still be had, because the realities, when you have the director of FEMA telling you this, it's a real wake-up call. By the way, Craig Fugate was so transparently human with me, and I quote him directly in the book. But he spoke about, you asked me earlier about what would be going through the president's mind, and we don't know, I don't know, but Craig Fugate told me what would be going through his mind. He said along the lines, I'm paraphrasing, it's almost something you

couldn't even comprehend. It would just ruin you. His words are really powerful. Of course, the FEMA director, in the scenario, is notified in that first window while the ballistic missile is on its way and no one in America yet knows. I have the FEMA director pull over to the side of the road and jump in a helicopter that's sent for him to take him to the bunker that FEMA goes to, which is called Mount Weather. And so, Fugate was aware that, as FEMA director, you would likely be taken to a safe place, however many hours you're going to be safe, or days or maybe weeks or maybe months. But as I also learned from the cyber people I interviewed, that there's a complete fallacy that these military bases can continue functioning. They run on diesel fuel, and when the fuel stops pumping, there's no more generators.

### **Lex Fridman**

Electricity's gone. Communication lines are all gone. The food supply. All of it, all the supply chains is gone. It's terrifying, and that's just in the first few days, first few hours. In part five, you described the 24 months and beyond after this first hour we've been talking about. What happens to earth? What happens to humans if a full-on nuclear war happens?

### **Annie Jacobsen**

For that, I was super privileged to talk to Professor Brian Toon, who's one of the original five authors of the nuclear winter theory. That theory was published in the early 1980s. One of Professor Toon's professors was Carl Sagan, who was sort of the most famous author of the nuclear winter theory. There were all kinds of controversies about it when it came out, including the Defense Department saying it was Soviet propaganda, which it wasn't. What the nuclear winter authors conceded back in the '80s was that their modeling was just the best it could be based on what they had at the time. And so, now flash forward to where we are in 2024, and talking to Professor Toon who's been working on this issue for all these decades since, he shared with me how the climate models today with the systems we have, the computer systems, reveal that actually nuclear winter is worse. To answer your questions, the bombs stop falling, in my scenario, 72 minutes after they first launch. The bombs stop falling, and then the megafires begin. Each nuclear weapon will have, according to the Defense Department, a megafire that will burn between 100 and 300 square miles. 1000 weapons, 1500 weapons, think about those megafires. Everything is burning, forests, cities. Think about the pyrotoxins in all the cities. High-rises burning. All of this soot gets lofted into the air, according to Toon, some 300 billion pounds of soot. What happens? It blocks out the sun. Without sun, we have nuclear winter. We have a situation whereby ice sheets form. You're talking about bodies of water in places like Iowa being frozen for 10 years.

### **Lex Fridman**

So temperature drops.

**Annie Jacobsen**

Temperature plummets. There are all kinds of papers that have been written about this, using modern systems and the numbers vary, but the bottom line is agriculture fails.

**Lex Fridman**

Foods obviously dies. The agriculture system completely shuts down, so the food sources shut down. There's no food. There's no sun. Temperature drops completely. No electricity.

**Annie Jacobsen**

We haven't even spoken of radiation poisoning because the radiation poisoning kills many people in the aftermath of the nuclear exchange. But after the nuclear freeze ends, after nuclear winter, after the sun starts to come back, let's say eight, nine, 10 years, now you have no ozone layer or you have a severely depleted ozone layer. And so, the sun's rays are now poisonous. If you have people living underground and you have this great thawing, and with that great thawing comes pathogens and plague. You have this system where the small-bodied animals, the insects and whatnot, begin reproducing really fast, and the larger body animals like you and me begin to go extinct. Professor Toon said it to me this way. He said, "66 million years ago, an asteroid hit Earth, killed all the dinosaurs and wiped out 70% of the species, and nuclear war would likely do the same." And so, here we are talking about this because there is a difference. There's nothing you can do about an asteroid, but there is something you can do about a nuclear war.

**Lex Fridman**

Do you think it's possible that some humans will survive all of this? If we look, I mean, how long would it be? Would it be decades? Would it be centuries before the earth starts to have the capacity to grow food again?

**Annie Jacobsen**

Carl Sagan talked about that in this amazing book that he wrote with two scientist colleagues called *The Cold and the Dark*. There's a bunch of essays about exactly this. What would happen and how long would it take? It's really interesting. It's dated. It's from the '80s. But man, is it shocking. You think about that where men return to sort of the worst, most base versions of themselves. Civilization is gone, meaning civil society. There's no rule of law. It's just fend for yourself. There's people fighting over what little resources there are. Man returns to a hunter-gatherer state. To really think about this idea, I looked at the oldest known archeological site in the world in Turkey, which is called Gobekli Tepe. It's really fascinating to me because I interviewed one of the two archeologists who first found this site in the early '90s. The lead archeologist was a guy named Klaus Schmidt, and Michael Morsch was the young graduate student who was with him. Morsch's description of coming upon this rumored to be site, there was something called a wishing tree on the site, which I just found so human and perfect, that it was this magical place, and it was Locatable because there was a wishing tree on a hill. It's where people went to wish and to hope that

their wishes came true. I mean, how human is that? That is where beneath the wishing tree, in the shadow of the wishing tree, there was a tepe, which is a hill. Beneath that, there is the oldest known civilization in the world. 12,000 years ago, a group of hunter-gatherers built this site. Why? We don't know. But I imagined through Morsch's descriptions of coming upon. He tripped on a rock, he told me. He tripped over a stone that turned out to be the top part of a 12,000 year old sculpted man, giant pillar. He talked about coming upon that. And then, no one knows really what Gobekli Tepe was for. That makes my mind try and answer the question you asked me internally, just as a human who's here on earth for the amount of time I'm here. If there were a nuclear war, what would it be like? What would it be like when someone in the future, would we become archeologists one day? Would civilization rebuild? Would we develop computers? Who knows? It's interesting to think about. I hope we never have to.

**Lex Fridman**

What would we remember about this time?

**Annie Jacobsen**

Right.

**Lex Fridman**

It is terrifying to think that most of it will be forgotten. Everything we assume will not be forgotten. We think maybe some of the technological developments will be forgotten, but we assume some of history won't be forgotten. But realistically, especially us descending into primitive survival, probably everything since the industrial age will be forgotten. Everything. Maybe some religious ideas will persist. Some stories and myths will persist. But all the wisdom we've gathered, higher level sort of technological wisdom would be gone. That's terrifying to think about. Maybe even, as you touch on, the very fact of nuclear war might be forgotten. The lessons of nuclear war might be forgotten. That there are these weapons, sort of the obvious elephant in the room would be one of the things that's completely forgotten or become so vague in the recollection of humans that our understanding will change. It's almost as if a God descended on earth and destroyed everything. Maybe that's how it will persist. Mythological interpretation of what nuclear weapons are. That's terrifying because then it could repeat again.

**Annie Jacobsen**

But I think, for me, the idea of what is buried becomes very interesting and very human, and in a strange way, optimistic and positive because if you can visualize that wishing tree, and I have a picture of it in the book from one of the archeologists who work on that, you think, "What were they wishing? What were they wishing for?" And then, you think of your own self, what do I wish for in this world? Because I do think all things come from what happens metaphorically around the dinner table. What people put their eyes on becomes interesting and expands what people talk about. Ultimately, when you think about the long arc of time



and human civilization, it does kind of make you want to communicate more with your enemies, with your adversaries. I think about the quote, what Einstein has said to have said, which is that he was asked what weapons World War III would be fought with. He said, "I don't know, but I know that World War IV will be fought with sticks and stones."

### **Lex Fridman**

Let me ask you about the great filter. When you look up into our galaxy, into our universe, look up at the sky, do you think there's other alien civilizations that are contending with some similar questions? Perhaps the reason we have not definitively seen alien civilizations is because the others have failed to find a solution to this great filter. Something like nuclear weapons.

### **Annie Jacobsen**

I'm not sure. I'm going to have to think about that question. But what does come to mind is an answer that was given to me similarly by Ed Mitchell, who went to the moon. He was the sixth man to walk on the moon. And so, his opinion, I think, might count a little more than mine on that subject because his lens is so much greater. Mitchell was vilified when he got back from the moon because it became known that he believed in things like extrasensory perception and this kind of mystical, metaphysical way of looking at the world. He really suffered from that. I mean, he was ridiculed and he lost a lot of his career and his friends. But what he said to me in our interview about his trip home from the moon answers that great filter question, I think, in a way I might want to adopt, which is this. He said that as they were returning from the moon to earth, he looked down at the earth, and I'm paraphrasing him, I write all this in *Phenomena*, an earlier book, but the paraphrasing is that he looked down from the earth and it was 1971. He thought about all the conflict going on down below, particularly the Vietnam War where many of his friends were. And then, he looked behind him into the great vast galaxy. He had a moment, he says, that was like an epiphany. Not a near-death experience, but a sort of near-life experience where he believed that the human consciousness, which is where so much of this thoughtfulness about metaphysics and ESP perhaps come from. Mitchell's theory, was that human consciousness, the way to understand it, had something to do with realizing that man's inner life and man's outer life are deeply connected, in the same way that man is connected to the galaxy. He said it much more eloquently, but you kind of get the idea. I think it's why humans have always loved to look up, that there's more there. It's like the big version of the wishing tree, what do I wish for for myself? What is maybe, perhaps, the realignment of thinking for those of us in search of happiness instead of war. What does it mean to have a conscience, to have consciousness? What does it mean to be a thinking person? What does it mean to be on this earth, to be born, to live, to die? And then, there is legacy. And so, all of those ideas are, I think, foster the kind of conversation that de-escalates conflict.

**Lex Fridman**

In some deep way, the mysteries of what's out there when we look out to the stars are the same mysteries that we find when trying to understand the human mind and they're coupled in some way. For me, thinking about alien civilizations out there is really the same kind of question, which is, what are we? What is this? What are we doing here? How do we come here? Why does it seem to be so magical and beautiful and powerful? Now, where's it going? Because it feels like we're really, perhaps for the first time in history, are in a moment where we can destroy ourselves. And so, naturally you ask, well, where's others like us? Perhaps, are we inevitably going to a place where we'll destroy ourselves? Is it basically inevitable that we destroy ourselves? We become too powerful and insufficiently wise to know what to do with that power? But like you said, probably the answers to that are in here. We don't need to look out there. I'd love to ask you about the extrasensory perception. You've written, like you said, the book *Phenomena* on the secret history of the US government's investigations into extrasensory perception and psychokinesis. What are some of the more interesting extrasensory abilities that were explored by the government, and maybe just in general, ESP. What is it? What do you know of it?

**Annie Jacobsen**

The book was so interesting to report because I spend so much time dealing with mechanized systems, machines, war machines, and yet the military and intelligence were and continue to be incredibly interested in the human mind, in consciousness. And so, if one is called hard science, what we're talking about now is called squishy science. It was really interesting to delve into that world. It just couldn't be farther from weapons and war, or could it? And then, I really began thinking, well, before science and technology, sort of the supernatural ruled the world. The Oracle of Delphi in Greece exists before the common era rulers to go and beg to learn from the powers that be what was going to happen. All ESP programs, I think, pull from that origin story, the leader's desire to know. And so, I really found it amazing that many people think these systems, or rather these programs, started in the '70s. I learned they actually began right after World War II. That was because, and in my reporting, I find all things sort of always circle back to the Third Reich, to the Nazis. The Nazis had a massive occult program, an ESP program, psychokinesis program, astrology. Both Hitler and Himmler were deeply interested in these occult concepts. After I learned from records at the National Archives that after the war, half of everything went to the Soviet Union, and I'm talking about the trove of Nazi documents from which the superpowers were then going to learn to fight future wars, and half of them went to the United States. And so, we got this trove of documents about all of this, and the Soviets got the other. And so, it set off a kind of psychic arms race, which in a weird way paralleled the nuclear arms race, which we've been talking about, in as much that it led one side to constantly wonder what the other side had.

**Lex Fridman**

Have they been able to find anything interesting in this squishy science analysis of trying to see how the human mind could be used as a weapon?

**Annie Jacobsen**

The CIA most definitely believed, from my reading of the documents, that there was something very legit, shall we say, about ESP. It was uncontrollable, it was unreliable, but nonetheless it existed. Being the intelligence agency that they are, they cared less about why it worked. They just wanted to know how they could use it. And then, it got into all kinds of elements of placebo effect. When the military stepped in and got involved in the programs, that was a complete disaster, in my opinion, because the military needs to control everything in a mechanized, systematic way. And so, they started, for example, teaching people to be psychic, which is a really, really, really bad idea. Flash forward to where we are today, these programs still exist. There's a Navy program which is working, based on a lot of data that came back from the war on terror, with certain soldiers knowing, "Wait, don't walk down that path. There is an IED there." They call this the spidey sense, and they actually have a program that works from this. These things never go away. They circle around in terms of being made fun of and then taken seriously, and a little of this and of that. My biggest takeaway from writing that book was a quote that I referenced in the beginning, which is the Thomas theorem, and it says, if men define situations as real, they are real in their consequences.

**Lex Fridman**

I mean, placebo, as you've mentioned, is a fascinating concept. By the way, a short plug, I started listening to it, Andrew Huberman just released a podcast on placebo, the placebo effect.

**Annie Jacobsen**

Does he know the origin story of placebo? We'll have to ask him.

**Lex Fridman**

We'll have to ask him.

**Annie Jacobsen**

Are you ready for this?

**Lex Fridman**

Yes.

**Annie Jacobsen**

CIA. Not only that, I can tell you that Dr. Henry Beecher, Harvard, I think he was also at MIT for a bit, he came up with that term. You might even say for the CIA.

**Lex Fridman**

Does that trouble you that so much of this is coming from the CIA first?

**Annie Jacobsen**

You mean the placebo concept or the -

**Lex Fridman**

The placebo concept, but a lot of the sort of scientific investigations.

**Annie Jacobsen**

Listen, I have such mixed feelings about the CIA, as one should. I think you should have mixed feelings about anything that you cover as a reporter or as a human, and maybe change that from mixed to conflicting, because there are really positive elements of every organization within the federal government. I mean, my first learning about the CIA came from the work I did on the Area 51 book about their aerial reconnaissance programs, which were set up again to prevent World War III, nuclear World War III. It was this idea that information was king. The U-2 spy plane was developed out at Area 51. I interviewed Hervey Stockman, the first man to fly over the Soviet Union in a U-2, gathered all this intelligence, prevented wars. Later, I wrote a book about the CIA's paramilitary, Surprise, Kill, Vanish. Just when I was thinking, "Wow, the CIA is doing all this amazing non-kinetic activity with aerial reconnaissance, then you learn about their kill programs," and that's a whole different set of issues.

**Lex Fridman**

It turns out, as you write in that book, that the CIA assassinates people sometimes, and we'll talk about it. But anyway, like you said, conflicting feelings.

**Annie Jacobsen**

I mean, I work with sources to report my books. And so, put yourself in my shoes. I interview for dozens or hundreds of hours, my primary sources. In the case of the Surprise, Kill, Vanish book, I traveled with Billy Waugh, the longest-serving CIA operator, back to the scene of the crime, back to the battle. We went to Hanoi. We went to Havana. You really get to know someone, and that's when I say conflicting. I work with sources on a real trust basis. Sometimes people will tell me things. They'll say, "Annie, this is off the record. This is for you to know about me on deep background because I want you to know who I am," and that's powerful and a lot of times personal. It's personal. It's about their personal life, and it isn't apropos to what I'm writing about, but I need to know that. That's where it gets conflicted, in a good way, because you realize where we're all such creatures of our personal lives. You have a professional life where national security are in your hands. I don't know what that is like.

**Lex Fridman**

I wonder if you could just speak to that. You've interviewed so many powerful people, so many fascinating people. As you've spoken about, trust is fundamental to that, so they open up and really show you into their world. What does it take to do that?

**Annie Jacobsen**

I think willingness. We were talking about trust earlier. I have to trust that there's a reason I find myself in a certain situation. Otherwise, it would just be a constant doubt paradox. Why am I here? What am I doing? And so, I trust that I'm going to learn something of value. And so, I'm willing to listen. I really am willing to listen. So far, it's always proven - the expectations I might have going into something are dwarfed by the outcome because people are so interesting and because the people that I interview, because I write about war and weapons and national security and government secrets, and the people I interview are at the heart of all of this. I mean, they are really capable people, intellectually brilliant, physically capable. They go so far out on the limb to do their jobs. By the way, the reason they're talking to me is because they're still alive and so many of their colleagues are dead. It gives them also a wisdom about life, about sacrifice, not in cliched sort of nationalistic jingoistic terms whatsoever. I'm talking real. What is their real truth? When I went to Vietnam with Billy Waugh, I mean, the details are just every detail. I mean, starting with the fact that he showed up at my house with a giant suitcase and a bunch of clothes, dry cleaning, pressed clothes in plastic hangers, carrying them. I'm like, "Billy, we're going to Vietnam and we're going back into the jungle to find the Oscar-8 battle site. What are you carrying?" He got really mad at me, did not like anyone correcting him. I got my husband on the job, like, "Kevin, you got to sort this out." What transpired was that Billy Waugh had never taken a trip for personal reasons. He operated, I think, in 62 countries, every single time for the CIA. It would go like this, Billy, go to there and get to there, and that's what he would do. When he arrived, whatever he needed, he would just get. It's not a fashion trip. He had no idea how to pack for an overseas trip. This was like, "Oh my God, how can you not have the hugest smile on your face going into this? I'm with a guy whose 89 years old." He'd had eight Purple Hearts from Vietnam. I mean, he operated against Osama bin Laden 10 years before 9/11. He went after bin Laden in Afghanistan when he was 72. He went after Qaddafi during the Arab spring when he was 82, and now here he is with me going to Hanoi. The details, those human details. But my husband repacked his bag and got him a proper suitcase that was carryable and small and he wasn't trailing the hangers, but it was the trip home in the taxi that I got at this really big reveal. Billy reached into that small suitcase my husband had given him and pulled out a rolled up American flag. He had taken this flag, because I had tried to help him pack and he wouldn't let me, and I just thought it was like an old guy being stubborn, but he didn't want me to see that he was bringing an American flag to Vietnam, which is not legal. He wanted to bring that flag and take it around everywhere with him, as he explained to me later, to honor all of his friends who died there 50 years ago. And then, when the trip was finished, he gave me that flag and it's in my office. That's the kind of relationship that you can develop with people as a reporter, if you're willing to go the extra

mile with them, to trust them, that they'll tell you things of value. To me, something like that is as of value as any secret mission I'm able to get declassified, because we are a nation of people.

**Lex Fridman**

And -

**Annie Jacobsen**

- get declassified because we are a nation of people.

**Lex Fridman**

And probably there's a bunch of human details that you can't possibly express in words, things left unspoken, but you saw in the silence exchange between the two of you, the sadness, maybe you could see in his face looking back at memories of the people he's lost, all that kind of stuff.

**Annie Jacobsen**

All that kind of stuff.

**Lex Fridman**

You mentioned you wrote a book on Area 51. For people who don't know, you've written a lot about security, the military, secrets, all of this kind of stuff. So Area 51 is one of the legendary centers of all of these kinds of topics. So high level first is what is Area 51, as you understand it, as you've written about the lore and the reality.

**Annie Jacobsen**

I think everybody wants to know about Area 51, because it's like this American enigma. It's like to some people, it's the Shangri-La of test bed aerospace programs, and to others, it's the place of captured aliens and everything in between. I had the great fortune of interviewing 75 people who lived and worked at that base for extended periods of time, mostly leading up to the '90s because everything since then is classified. So things get declassified after decades. Not everything but some. And that allows you to piece together stories.

**Lex Fridman**

So you talked to a lot of people that worked there. What can you describe as the history of technological development that went on there?

**Annie Jacobsen**

I mean, Area 51 is huge, by the way. It's a top secret military facility inside a top secret military facility inside the Nevada test and training range, which is this massive not secret facility. So you're just talking about layers, talking about peeling the onion in reverse. And it

began as a place to test the U-2 spy plane. And literally the CIA set up shop there to build this plane away from the public eye. And then that led to another espionage platform called the A-12 Oxcart, which is anyone who's seen the X-Men movies knows about the SR-71. And that's a two-seater, right? And before that, there was the A-12 Oxcart, and that was the CIA's stealth Mach 3 spy plane. Think about that in the early 1960s. It's astonishing. And I interviewed the pilots who flew it.

**Lex Fridman**

What did they say about it? What was it like?

**Annie Jacobsen**

Oh my God, look, I describe in detail in Area 51. But also the amazing thing, Lex, about that was that, and I just look back on that with such fondness. This is like in 2009 when I was reporting that, and many of the guys who were in their 80s and 90s were World War II heroes, like serious World War II heroes like Colonel Slater who was the commander of Area 51. He flew the U-2 on the missions called the Black Cat Missions over China in the early 1960s to see about their Lop Nur nuclear facility. So all of these things tie in when you're reporting on military and intelligence programs. But these guys had been World War II heroes, and then were given this cushy job out at Area 51. And it just came with all these perks. Colonel Slater told me this one perk, I just love so much. They all had a hankering for lobster one day. And here they're in the middle of the desert in Nevada, and they have these really fast planes, and they literally called, they arranged, they didn't take the Oxcart out for that one, but they got some lobsters from Massachusetts delivered to them in record time. They didn't even need to put them on ice. And again, those are these details where you're like, at least for me, "Thank God I got these details. These guys are all passed now."

**Lex Fridman**

So there's a lot of incredible technological work going on there. So the legend, the lore, like you said, aliens, were there ever aliens in Area 51 as you understand it?

**Annie Jacobsen**

So I've interviewed hundreds of people.

**Lex Fridman**

That worked there.

**Annie Jacobsen**

Well, not just at Area 51, but in all the different national security and military intelligence and intelligence programs. And I personally have no reason to believe that aliens have ever visited Earth. That's just me personally.

**Lex Fridman**

Just at an Earth, period.

**Annie Jacobsen**

I have no information that causes me to conclude that's the case. Now, with that said, many of the primary players in this present day, there are aliens among us narrative, are in my phenomena book. I continue to communicate with a lot of these people. I'm talking about astrophysicists who fundamentally believe that there are aliens among us. So we beg to differ on that issue.

**Lex Fridman**

But for you, in terms of doing research on government agencies that do top secret military work, I mean they would know. So you have interviewed a lot of people that have, at every layer of the onion, you don't see evidence or a reason to believe that there was ever aliens or UFOs captured from out of this world.

**Annie Jacobsen**

That is correct. And even perhaps more important, and perhaps this colors my thinking, but I am uniquely familiar with disinformation programs put forth by the CIA or the agency as it's called by insiders. I've learned firsthand about these program or rather learned from firsthand participants in strategic deception campaigns that the CIA has engaged in beginning with Area 51. The idea that all these reports of this U-2 spy plane, this giant long-winged aircraft flying 70,000 feet up, people didn't think airplanes could fly that high. And it's the sun shining off of it. It looked like a UFO and all the reports coming in and the CIA opened up a UFO disinformation campaign office headed by a guy named Todos Odarenko specifically for this reason. Now, does that mean that every UFO sighting in the world has been a U-2? No, but I come from it from that lane of thinking, and there are so many strategic deception campaigns, and as I look over the decades of how these same UFO stories, and again, this is just my opinion based on my reporting, this narrative that keeps reoccurring, it seems to me like a very large catch- all to keep the public's attention on that, not on that.

**Lex Fridman**

So to you, sexy stories like UFOs are going to be leveraged by the CIA for strategic deception.

**Annie Jacobsen**

A hundred percent. I mean, Google Paul Bennewitz, I'm always amazed that Paul Bennewitz's story is not more widely spoken of. And I think that's because there's the sort of ufologists or people who are absolutely convinced that aliens are among us, and I use that term loosely, but you know what I mean. And then there's the quote unquote, "skeptics". And the skeptics tend to be sort of like self-righteous, and I would never want to be self-righteous.



So I'm not a skeptic, I'm just agnostic, I suppose. But Google Paul Bennewitz, and you can learn the story of that man who thought he saw a UFO in the '70s, early '80s, and the Air Force, because the Air Force intelligence community works hand in glove with CIA a lot. And some of the other intelligence agencies, of course, they're 17, not just the CIA, and they destroyed Paul Bennewitz. They sent him to a mental institution by pulling a massive strategic deception campaign against him because they didn't want him to know about the technology that he was seeing at Kirtland Air Force Base. So look that up, and then you go, "Oh my God." And to my eye, you can apply any of these other names substitute in Paul Bennewitz or any of the current individuals who really become convinced of X, Y, or Z, when in fact there's a strategic deception campaign going on.

### **Lex Fridman**

There's a lot of incentive for the CIA and other intelligence agencies to get you to look the other way on whatever is happening. Plus, from an enemy perspective, whenever two nations are at war to try to create hysteria in the other.

### **Annie Jacobsen**

But then you have the Thomas theorem, that becomes applicable there too. If men define situations as real, they are real in their consequences. So this idea of UFOs and we're being lied to, it becomes real to many people. And then that creates a whole subset of problems to the point where things are spiraling out of control and there is no center anymore. So a lot of people that are briefed on programs maybe aren't even aware of their position within a greater campaign, or I'm wrong, and there are aliens among us.

### **Lex Fridman**

So I appreciate the possibility of acknowledging that you might be wrong. From everything about the US government, if there was an alien spacecraft, what do you think would happen? Would they be able to hold onto those secrets for decades? Would they want to hold onto those secrets? What would they do? What's your sense?

### **Annie Jacobsen**

I can't imagine that kind of exciting situation not becoming public information. And the counter to that is this, which is, this is a very strong argument for why this is a big strategic deception campaign. Think about the Defense Department and the air - think about how jealously they guard its airspace. I mean, you had a Chinese balloon flying over and the whole world went crazy. It was front page news. So the fact that one element, or a couple people in the defense department have made this statement, we've lost control of our airspace over this alleged UFO craft that they can't explain. I don't buy that at all. Zero.

### **Lex Fridman**

But of course it's possible that it is alien spacecraft if it is that. And they operate under a very different set of technological capabilities in theory.

**Annie Jacobsen**

In my interviews with Jacques Vallee, who is the kind of grandfather of all ufology, and he's such an interesting person and has such a really unique origin story about how he came into all of this. And he's such a scientist, and he is profoundly dedicated to this issue and stands completely on the opposite end of the spectrum from me, and knows a lot more and has studied this for decades more. But what he said to me is the most interesting thing, which is that it's not a military problem, it's an intelligence problem. Because Jacques believes that this is some kind of intelligence, which really the closest I can do to wrapping my head around that takes me to consciousness, the idea of what is consciousness. And I think that's where it becomes very interesting. I think the government is hiding bodies and crafts is very Paul Bennewitz, read it, Google it, look into it, right?

**Lex Fridman**

I think this kind of flying saucer thing is a trivialization of what kind of, if there's alien civilizations out there.

**Annie Jacobsen**

Trivialization. That's a great word. Trivialization, I agree with you.

**Lex Fridman**

I tend to believe that there's a very large number of alien civilizations out there, and I believe we would have trouble comprehending what that even looks like were they to visit. I tend to believe they are already here or have visited, and we're too dumb to understand what that even means. And they certainly would not appear as flying objects that defy gravity for brief moments of time on a low resolution video. I tend to have humility about all this kind of stuff, but I think radical humility is required to even open your eyes to what an alien intelligence would actually look like. And to me, it's beyond military applications. It's like the basic human question of what is even this thing, like you mentioned consciousness that's going on. Where's this come from? Why is this so powerful? Is it unique in the universe? I tend to believe not. Of course, I hang out a bunch with other folks like Elon who believe we are alone, but I think that belief, just like you said, has power because it actually manifests itself in reality. So if you believe that we're alone in this universe, that's a great motivator to build rockets and become multi-planetary and save ourselves, especially in the case of nuclear war, because otherwise, whatever this special sauce, this flame of consciousness will go out if we destroy ourselves on this earth. And for people like Elon, it's too high of a probability that we destroy ourselves on earth not to try to become multi-planetary. In your book on Area 51, you propose an explanation that I think some people have criticized at the very end that this might've been a disinformation campaign from, I guess Stalin, that the Roswell incident was a remotely piloted plane with a quote, "grotesque child-sized aviator". Just looking back at all that now, years later, what's the probability that it's true? What's the probability it's not?

**Annie Jacobsen**

So you know I've never revealed to that sources.

**Lex Fridman**

Yes.

**Annie Jacobsen**

Did you know that? You want me to tell you?

**Lex Fridman**

The source?

**Annie Jacobsen**

Yeah.

**Lex Fridman**

Who is the source?

**Annie Jacobsen**

So before I say anything on that, let me speak to the question that you asked. So you asked me what's the probability that that is still standing as an idea, 12, 13, 14 years later. So I continued to work with that source for years afterwards. We talked about this. Look, I mean, his whole family knew it was him, and I knew his family because I was an integral part of - I was at his house, met all his kids, grandkids.

**Lex Fridman**

We should say the source is the main expert advisor behind the story that it was - maybe you can explain what the story is that you report in the book that it was disinformation campaign created by Stalin to cause mass hysteria in the United States. The very kind that we've been speaking about with the CIA and so on.

**Annie Jacobsen**

Yes, predicated on the narrative of the War of the Worlds and the War of the Worlds when it was a radio program in the United States made people go crazy. "Oh my God, we're being invaded by aliens." Well, the government was always interested in this story, and Joseph Stalin was too. We know that from declassified documents. And so the source told me that the reason for this program and that the real Roswell crash remains were, in fact, it was a black propaganda hoax infiltrated, or rather predicated at this idea that you were going to overwhelm America's early warning air defense system cause mayhem and maybe be able to attack the United States. That was the plan. And Stalin was also messing with the United States, messing with Truman, who sort of turned his back on him at Potsdam. And so this idea and the reason that the source is important, and unlike a lot of people, "I saw, I saw

this, I saw that, I learned that," was according to the source, once it was determined that this was a hoax and that Stalin was able to get a craft over the United States, and it crashed and it had people inside of it. They were people that were sort of deformed and meant surgically altered to look like aliens. The United States government decided that it needed to know what on earth that was all about. And if it was possible for us to have the same program, this according to the source. And so it sounds preposterous, and if it was just someone saying, you might say, "Well, it's ridiculous," and get them onto another subject. But the difference was is this source who was very well-placed and friends with all of the other 75 people told me this as a confession, a real tearful confession. Because what he said is he was involved in the American program to do the same thing, and people died because there were human experiments that went on. And I write about this in the last 12 pages of Area 51. It was an explosive revelation, and I felt very confident in writing this because the source wanted it written. Why? Because he said, "I'm dedicated to my country. I know about being committed to national security, and this kind of thing must never happen. And if you give people too much power, they would take advantage of it." And he wanted it on the record. And his wife of 60 years did not know until after the book published, nor did his children. So after the book published, I was called to his house and sat there with his family and they said, "Tell us this isn't true." And he said, "It is true." Now that source is Al O'Donnell, who is the nuclear weapons engineer who armed, wired, and fired 186 nuclear weapons. So if you want to talk about someone, you're the first person I've told that on the record, but it's kind of about time.

### **Lex Fridman**

Wow. Well, you received a lot of criticism over this story, and it confused me why because given the context of everything you've described with the CIA and other intelligence agencies, it is reasonable that such as action would be taken.

### **Annie Jacobsen**

And the source is extraordinarily credible. If you wanted to take the position, "Well, that person isn't very reliable." Then you have to ask yourself, why did they have top secret clearances that are higher than any in the United States whatsoever? Because he was responsible for arming nuclear bombs. He was called the trigger man, and by the way, he told me that I could tell the world who he was. There's a lot of details that are really dark involving that program. And when is it appropriate? Right? Well, it feels appropriate now, first of all, because you and I have been talking for several hours. So this is what is truly a long-form conversation, and it's the outcome of a very long time of my reporting and also being judicious about closing the loop on that because I do think it's important for people to know that sources have revelations.

### **Lex Fridman**

And like you said, the programs both on the Soviet side and the American side, conflicting, I think is the term we used previously, ethically, morally, on all fronts. People have done some

horrible things in the name of security. In your book, *Surprise, Kill, Vanish*, you write about the CIA and the so-called president's third option. So first of all, first option being diplomacy and second option being war. So when diplomacy is inadequate and war is a terrible idea, we go to the third option. And this third option is about covert action, and it's about assassination. So how much of that does the CIA do?

**Annie Jacobsen**

That is open to debate. We know from the historical record that the CIA was heavily involved in assassination during the Cold War. That's non-negotiable. Even the names of the programs that were assigned to perform assassinations are fascinating and now declassified, like Eisenhower's, for example, was the Health Alteration Committee.

**Lex Fridman**

Well, at least they have a sense of humor to this dark topic.

**Annie Jacobsen**

Then the more modern names are targeted killing, executive action, targeted killing. I mean, drone striking is essentially assassination. And people jump up and down and say, "That's not true." Well, I spent quite a long time interviewing the CIA's lead council, John Rizzo. He died recently. But Rizzo was very forthcoming with me, of course, never sharing classified information, but going up to the edge of what can legally be known. Rizzo was thrown under the bus by sort of the general public for he was the fall guy for the torture campaign. The CIA calls it enhanced interrogation. And so Rizzo had this long career. He began working under the Carter administration and was responsible for the torture memos, was responsible for legally making sure the president's ass was covered and then got thrown under the bus. And so he was very forthcoming, not in a bitter way, but in a very earnest way about a lot of how these programs are made to be legal. Because if the President of the United States says they're legal, they're legal. Executive Order 12333. It says, we don't assassinate, but it can be overwritten by another order that's straight out of Rizzo's mouth. Also, really important to keep in mind is that the military operates under what's called Title 50. It's part of the National Security Code that gives rules and etc. How you must behave in a war theater. Well, the CIA is under no such rules. It operates under what's called Title 50. And it's interesting to me as reporter, because before I wrote the book and reported openly about Title 50, it was not really discussed. And now you even see operators themselves on podcasts talking about Title 50, which is kind of great because it's like the cat's out of the bag, guys. That's what it's called. And that's how it works. It means what we say goes.

**Lex Fridman**

Can you elaborate on what Title 50 is? So it basically says assassination is allowed.

**Annie Jacobsen**

It says what the president wants the president gets, right? And so, I mean, the best example is the killing of Bin Laden. We were not at war with Pakistan, so Title 50 doesn't apply. You can't have a military operation in a country you're not at war with. I mean, the lines, now they've really blurred, but even then they were a little more honored. And so what do you do? Well, Leon Panetta was the CIA director, and you work out a scenario whereby the SEALs, and by the way, there was a rotational on that killer capture mission, which was really just a kill mission. SEALs were practicing, Delta was practicing, and special activities division was practicing. They were all practicing at a secret facility in North Carolina. And it was just like they're ready until they get the go order. And it just happened to be the seals. So the SEALs operate under Title 10. So they had to get what I call sheep-dip because that's what the insiders call it. And that is a term that comes from interestingly Area 51, the U-2 pilots who were Air Force pilots, they needed to be sheep dipped over to the CIA so they could do things that defied the law. So you can see how these all entwine and you become more and more informed, and you go, "Aha." Right? So that's how Title 50 worked. So the night of that mission, it was a CIA mission because the CIA is allowed to go into Pakistan and kill someone, and the military can.

**Lex Fridman**

That's fascinating. So people talk about the Navy SEALs doing it, but it's really legally speaking to get the permission to do it within the whole legal framework of the United States, it was the CIA.

**Annie Jacobsen**

And if you look at their uniforms that they were wearing, and now that this you'll be, "Oh." You'll see, there's no nomenclature on them. They're just meant to be completely untraceable. Were they to be shot down and captured, it's like, "Wait, who are these guys? Oh, a bunch of rogue guys." And this goes back the origin story of all that is in Vietnam with MACV-SOG and these cross-border operations that I chronicle in *Surprise, Kill, Vanish*, which still amaze me to this day. I mean, SOG missions, they called it suicide on the ground, because that's what it was. And these guys had no identifiable. Nothing. I mean, they were essentially in pajamas. Even their weapons were specially designed by the CIA to have no serial numbers, no nothing. So if they were captured and they became POWs, I don't know who these guys are.

**Lex Fridman**

What do you think, and how much do they think at the highest levels of power about the ethics of assassination and about the role of that in geopolitics and military operations? To you maybe also, does assassination make sense as a good methodology of war?

**Annie Jacobsen**

I mean, again, I try to remain agnostic on the policy part of it and just report the operator's perspective, because this is what people do and this is what people are asked to do. And it depends on the individual. I mean, Billy Waugh went on a lot of those missions. I mean, the saying is like, "Oh, Billy Waugh, he killed more people than cancer." Did Billy Waugh ever tell me about direct assassinations? No, because they're all classified. Did he tell me about some failed ones? Yes. I'll give you an example. It's really interesting. He would show me these PowerPoints that were just fantastic. Late in his life, he was constantly being asked to go up to Fort Bragg and lecture to the young soldiers, and everybody loved him. And he would drive all night to get there, and he would create these PowerPoints, and then he would show me the PowerPoints, all unclassified. But at one point, when Hugo Chavez was in power, Billy Waugh was kind of asked, that's how it works, of if you had to think about doing something, what would it look like? Let's just say hypothetically. So he took me through this PowerPoint that never happened, whereby he and a group of operators, agency operators were going to HALO jump in to the palace and grab Chavez and probably kill him because he wouldn't allow himself to be captured. And by the way, HALO jumping, for those listeners who don't know, high altitude, low opening. So you jump out of an aircraft and you go down like a pencil until you're really low to the deck, like a thousand feet. You pull your parachute cord, and that way you're not picked up on radar and you're also not traceable when you get to the ground because it's so fast. Billy Waugh took the second HALO jump in history into a war theater in Laos during the Vietnam War. So he's like this famous HALO jumper. So he and the team were going to go in grab Chavez, and he said to me a very interesting thing that was kind of a one moment in time where I saw a different side of Billy Waugh where he said, "I'm so glad we didn't do that, even though I really wanted to at the time, because can you imagine that country's problems, where it is now? Can you imagine how we would have been blamed?" And it was an interesting rare moment for Billy Waugh to comment on the bigger picture that you're asking me about. I think pretty much the operators I know they just stick to the mission.

**Lex Fridman**

So on the technical difficulty of those missions, just your big sense, how hard is it to assassinate a target on the soil of that nation?

**Annie Jacobsen**

I suppose that just depends. Here's another insightful thing Billy Waugh said to me, and I'm answering the question around because I don't know, because again, I never had anyone say to me, "Here's how it went down," because you can't. First of all, those are classified, so I'm never going to receive classified information. I did hear a lot about reconnaissance missions when people would be in charge of, you have to be able to what's called make book on the target before, and making book on the target means photographing them then that gets run up the chain of command to make sure this is really Imad Mughniyeh we're about to kill. But I once asked Billy when I was trying to get the question and he wouldn't answer it,

and I said, so there's another person in my book named Rick Proto, who's also a legendary agency guy, and so he's like 20 years younger than Billy. And I said, "Billy, if you and Rick had to kill each other, who would win?" I was trying to imagine this hypothetical, how would that work? Who would win? And I posed the question to each of them, and of course each of them said me, then I went back to them and Billy said, "Let me tell you how I would win." And he said, "I'd cheat. I'd show up before the duel." I'd cheat. I'd show up before the dual, and I'd kill him.

**Lex Fridman**

Yeah. I have a lot of friends who were Navy SEALs. This is just guy conversation.

**Annie Jacobsen**

Well, you would be amazed at what the women do. Let me just tell you that. Women are part of the Special Activities Division, a big part of it.

**Lex Fridman**

Can you comment on that?

**Annie Jacobsen**

I can. Women can get a hell of a lot closer to a target. And I mean that literally.

**Lex Fridman**

The special operations, is this part of the CIA?

**Annie Jacobsen**

The Special Activities Division, now it's called the Special Activity Center. But originally that's the umbrella agency that has the different paramilitary organizations under it. So the most lethal one is Ground Branch. And that's what I reported on in *Surprise, Kill, Vanish*. And its origins go way back to the Guerrilla warfare corps that was started in 1947 for the president.

**Lex Fridman**

So women are also a part of the alleged assassination?

**Annie Jacobsen**

Absolutely.

**Lex Fridman**

And you're saying they can at times be more effective. I am just going to leave that pause there. The reason I ask of how difficult the assassinations are, with Bin Laden, it took a long time. So I guess the reconnaissance, the intelligence for finding the target. I imagine with Mossad, maybe this now the leadership of Hamas or the military branch of Hamas is much



wanted from an assassination perspective. So to me as an outside observer, it seems like it's more difficult than you would imagine. But perhaps that's the intelligence aspect of it, not the actual assassination of locating the person.

### **Annie Jacobsen**

Well, I think it's because mostly from what I understand, it's a really dirty game and people are covering for people. And I'll give you the example of Billy Vaughn and Imad Mughniyeh, if I may. So Imad Mughniyeh was the most wanted terrorist in the world before Bin Laden. Hezbollah's, chief of operations. And he was wanted by every, Mossad, jaw down. But no one could find him. He was missing for 20 years. There wasn't even a photograph of him. And then he resurfaced. And of all places he resurfaced in Saudi Arabia, okay. "What?" That's when I say it's a dirty game. Hezbollah, Iran, Hezbollah Iran, enemies with Saudi Arabia. Why on earth was Imad Mughniyeh in Saudi Arabia? Well, that's where he was. There was a Navy SEAL who was doing reconnaissance on him. This is according to Billy Vaughn. And this is around 2005. So Billy's in his '80s at this point, late '70s, '80s. He gets word that the SEAL who has been tracking Mughniyeh to get photographs of him, to give the photographs to Mossad and CIA so they can do a joint operation to kill him, which they did with a car bomb in Damascus. That's the end of the story. But how we got there was, the CIA needed confirmation. You can't kill the wrong person. So the SEAL panicked according to Billy Vaughn and was just like, "I'm out of here. This is too dangerous and I do not want to wind up in a Saudi prison." So who do you send in, Billy Vaughn? He shows up, he's there for 24 hours. He knows where Mughniyeh lives from the SEAL. He positions himself in a cafe across the street which is run by Sudanese men. And of course Vaughn speaks some Sudanese because he operated in Sudan. And he's shooting the shit with him by his own words. He had the most foul mouth that was just absolutely delightful to listen to. And then in between him and Mughniyeh's house is a dumpster. And Billy Vaughn being Billy Vaughn, who will go to any lengths to do the job, decides to conduct reconnaissance from inside the dumpster. And that is where he is when he takes the picture of Imad Mughniyeh living so comfortably in Saudi. That Mughniyeh according to Billy, came out of his apartment building with dry cleaner plastic bag hangers over his shoulder. That's how comfortable he lived there. It was his neighborhood. Click, click, click, Billy Vaughn takes the photographs, runs them to the CIA headquarters in Saudi at the embassy. Oh my God, it's Mughniyeh. Get the hell out of here. He gets to the airport, he leaves. Those photographs get sent to the agency, and then they do the operation with Mossad and Mughniyeh is dead. Now the truth about that being a co CIA mission was not reported for many years after the fact. Mossad took credit as the CIA often likes to just give other people credit. They just want the job done.

### **Lex Fridman**

Well, speaking of Mossad, in your understanding of all the intelligence agencies, what are the strengths and weaknesses of the different intelligence agencies out there? CIA and Mossad, MI6, SVR and FSB and Chinese intelligence, all this stuff. Is there some interesting differences, insights that you have from all of your studying FCIA?

**Annie Jacobsen**

That's a really interesting question. I don't know. And here's why. It's because I've never interviewed any intelligence officer with those other agencies. I've interviewed a couple of people with Shin Bet in Israel. But until I speak to an actual source whose job it was, I don't know. So the information that I'm getting is based on perception of others which one would think would be deeply clouded by the idea that America is the greatest. We're better than them.

**Lex Fridman**

Yes. Well, actually the fascinating thing is because you've spoken to a lot of people about the CIA. How do you know they're telling the truth? And this actually probably applies generally to your interviews with very secretive people. How do you get past the bullshit?

**Annie Jacobsen**

Well, that's just like multiple sourcing. So you find the story out and then you go to the national archives and you find the operation and then you learn all about this, and then you interview other people who were there and you put the story together to the best of your ability and you make very specific choices with "so-and-so said," said so-and-so. And very rarely do I report on a single source as I did in the end of Area 51. And then it says essentially, look dear reader, this is what the source told me. I have no way of corroborating it. This is legit and here it is. So that's an area to make your reader comfortable with the information that they're being given. And then in all of my books, whether there are three or 400 pages, there's always 100 pages of notes at the end. So you can see all the sourcing and you can begin to get an understanding of how journalism in the national security world works. And also great opportunity for me to say, I'm often standing on the shoulders of journalists before me who did an incredible job digging into something and being able to report what they knew. Often the books are 10, 20, 30 years old, and so much more has come to light since.

**Lex Fridman**

And I also would just like to say that I appreciate that you said, "Great question, I don't know." Not enough people say I don't know and that's a sign of a great journalist. But speaking about things you might not know about, let me ask you about something going on currently. So recently Alexei Navalny died in prison, perhaps was killed in prison. What's your sense from looking at it? Do you think he died of natural causes in prison? Do you think it's possible he was assassinated? Russia, Ukraine, Mossad, CIA, whoever has interest in this particular war.

**Annie Jacobsen**

For that, I look directly to the historical record. Having written about Russian assassination campaigns and programs since the earliest days of the Cold War. And Russia has a long history of assassinating, murdering dissidents. And in *Surprise, Kill, Vanish*, I tell the story

of an actual KGB assassin named Khokhlov who knocked on the door of the man he was assigned to kill. And by the way, this all comes from a book that Khokhlov wrote later. Because he defected to the United States. He knocks on the door and the guy answers the door. And instead of killing him, he has this moment of conscious of crisis or crisis of conscience and says, "I can't kill you, even though that's what I'm supposed to do." And then sits down with the guy and together decides, okay, we're going to defect. We're going to let the Western intelligence agencies know what we're doing here. And the CIA got involved. But Russian assassins were able to poison Khokhlov with polonium. What happens to him is insane and it's a miracle he didn't die, but he doesn't. And then he defects to the West and he writes these books and he tells lots of incredible secrets about the Russian assassination programs and their poison labs and they're really interesting. So to answer that question, I mean to my eye of course, I don't know, but it certainly looks like Russia is acting in the same vein that it has always acted, taking care of dissidents that go against Mother Russia.

### **Lex Fridman**

So in the style of KGB assassinations. Is there something you can comment on about the ways that KGB operates versus the CIA when we look at the history of the two organizations, the Cold War, after World War II and the leading up to today?

### **Annie Jacobsen**

I mean, my feeling on that is always that there's a thread somewhere in declassified documentation about these programs of America working to maintain assemblance of democratic ideals, however surprising that may be. In other words, always trying to, I don't want to say fight fair because killing people isn't fair, but versus a certain ruthlessness, a real sinister totalitarian type ruthlessness certainly from Soviet Russia. I'm far less familiar with modern day Russian assassination activities, although we certainly know on the record that they exist. Some people have done great reporting on that. But there seems to be almost a sadism about the Russian programs that I personally have not seen in the American programs.

### **Lex Fridman**

What about on the surveillance side? It seems like America's pretty good at mass surveillance, or at least has been revealed through NSA and all this reporting and leaks and whistleblowers. Can you comment to the degree to how much surveillance is done by the US government internally and externally?

### **Annie Jacobsen**

If you'd asked me five years ago, I would've a very different answer. Because first of all, they're looking for a needle in the haystack. They're looking for the Bin Laden and they can't find the needle in the haystack, but they continue to create the haystack and survey the haystack. I'm I right?

### **Lex Fridman**

Yeah.

### **Annie Jacobsen**

Okay. But the real problem, what has happened, and I write about this in my book, *First Platoon*, which is about a group of young soldiers who goes to Afghanistan and unwittingly becomes part of the defense department's efforts to capture biometrics on 85% of the population of Afghanistan. Which by the way, China then emulated in their own biometric surveillance program. And I think this is a terrible idea. But what has happened, these biometric systems that have been created and biometrics are of course fingerprints, facial images, DNA and iris scans that allow you to tag, track and locate people. And what has happened in the five years since this question was first on everybody's minds about NSA surveillance is that the civilian sector companies have essentially done all the defense department's biometric surveillance job for them by all of us sharing our facially recognizable images on Instagram and Facebook and everywhere else, X, by sharing information, by writing up narratives about ourselves. This information has become part of the database. Five years ago when I was reporting *First Platoon*, I was interviewing the police chief of El Segundo, which is like on the outskirts of LA. It's right near the airport. And why it's important is because it's like defense contractor haven. So they have massive surveillance. And Chief Whalen, when I posed this question to him, he said to me, "Annie, let me show you something." And he had Clearwater AI, the recognition software on his phone. And this was still when it was like quasi not supposed to, you have that for law enforcement. And he said, "I want you to go down the block and I want you to just turn the corner and come back toward me." Which I did. And he just didn't even hold up his phone. He just looked at his hand and his phone was on me. And he went back down and it was like the tiniest movement. And when I came back to him, he went like this and he showed me, there I was. Everything about me. Facts and figures and all images. And he knew who I was before I even got to him. So is that a good thing or a bad thing? I mean, we could have another three hour conversation about that alone.

### **Lex Fridman**

So you're saying more and more, you don't need NSA where we're giving over the data ourselves publicly or semi publicly.

### **Annie Jacobsen**

Yeah. During the war on terror, people were just incensed to learn that there is a drone that's flying at something like 20,000 feet. It's called ARGUS-IS. And it can capture the - it's not a license plate. It's like it can basically capture what's written on a golf ball from 17,000 feet, 20,000 feet up. And people went crazy over this like, "Oh my god, it's Big Brother." Well, one of the lead engineers on that, Pat Billkin is someone I talk to regularly because we talk about surveillance a lot because he thinks about it a lot because he has kids now. And he has given so much thoughtful, really thinks about this issue because he believes, just like you stated, that what we are turning over about ourselves actually exceeds anything that

ARGUS-IS could do from above because we're doing it willfully. So what it's doing is it's creating an ability for, if someone wants to know about you, if someone, let's say in government, wants to know about Lex Fridman, they can find out everything about you. And then that gets used for tagging, tracking and ultimately. In the war theater it was called find, fix, finish. Well, what do you think the finish is in that statement?

**Lex Fridman**

It's not pleasant.

**Annie Jacobsen**

It's called a drone strike. Find, find him with the biometric, fix him, meaning fix his position. We know he's moving in a car. That's him. Finish him. Call it in, drone strike. Boom.

**Lex Fridman**

If we could return to nuclear war, you've briefly mentioned that a lot of things go back to the Third Reich and Hitler. If we go back to World War II, we look at Hiroshima and Nagasaki, the dropping of the two bombs. I would love to get your opinion on whether we should or shouldn't have done that. And also to get your opinion on what would've happened if Hitler and Germany built the bomb first. Do you think it was possible he could have built the bomb first?

**Annie Jacobsen**

In my researching Third Reich weapons for Operation Paperclip, because of course we got a lot of those scientists, after.

**Lex Fridman**

Which is another great book in a terrifyingly complicated operation.

**Annie Jacobsen**

Yes. At what point do the ends justify the means? But in looking at those programs, and we acquired Hitler's favorite weapons designers. And I'm talking about weapons of mass destruction like chemical weapons and biological weapons. But of course, America was ahead in the nuclear program. And an interesting detail reading Albert Speer's memoirs. Was Speer referring to a conversation he had with Hitler where Hitler said, "No, I don't want to do that. That's Jewish science." So because of Hitler's own racial ethnic prejudices, they didn't develop the bomb. As far as should we have dropped the bombs on Hiroshima, I've interviewed all kinds of people with different opinions, most of them that had ended the war. The best interview and most meaningful perhaps that I ever did was with Alfred O'Donnell, who was a participant in the Battle of Okinawa, which was like this insane. Just to read stories about Okinawa, it makes your hair stand on end. And O'Donnell like so many others, was slated to invade mainland Japan, to his almost certain death. So somebody like that, it makes sense right from the get go why he would be pro nuclear weapons. It saved

his own personal life and it saved everyone that he knew that he was fighting with. And it ended the war.

**Lex Fridman**

Do you think it sent a signal? Like without that we wouldn't have known perhaps about the power of the weapons. So in the long arc of that history, 70 years plus, it is the reason why deterrence has worked so far.

**Annie Jacobsen**

Yes. That's an interesting thought. My thought goes to this idea of more. That everybody always wants more. It's a very dangerous - it's like more power, literally, just more power. And what is more confounding to me beyond the fact that we dropped two atomic bombs on Hiroshima and Nagasaki and the war ended is that this decision was then made to develop the thermonuclear bomb. A force that is such - the degree of magnitude of that power is mind-boggling. I mean even projects within the Manhattan Project defined thermonuclear weapon, the thermonuclear weapon as the evil thing. It was evil. It's a weapon of genocide. Atomic weapons destroy cities, thermonuclear weapons destroy civilizations.

**Lex Fridman**

You open the book with a Churchill quote, "The story of the human race is war. Except for brief and precarious interludes there has never been peace in the world. And before history began, murders strife was universal and unending." Do you think there will always be war? Do you think that there is some deep human way in which we're tending to this global war eternally?

**Annie Jacobsen**

Well, the optimistic answer of that would be that we could evolve beyond that. Because certainly if we look at our ancestors, they had not developed their consciousness as far as we have to be able to build the tools that we have. So the hopeful answer is we will evolve beyond this brute force, kill the other guy attitude. Certainly these are questions that will become more obvious over time. I just want to play my little part in this world that I live in as the storyteller who brings information to people so that they can have these questions with themselves, with their friends, with their families. And I think in asking that very question, what you're really saying is, why don't we evolve beyond war fighting?

**Lex Fridman**

It is very possible. And your book is such a stark and powerful reminder that human civilization, as we know it ends in this century. It's a good motivator to get our shit together.

**Annie Jacobsen**

But aren't you really saying human civilization could end, not it ends?

**Lex Fridman**

Could end.

**Annie Jacobsen**

Could end.

**Lex Fridman**

But the power of our weapons is growing rapidly.

**Annie Jacobsen**

As they say, it's time to come back from the brink. And it's time to have that discussion while we're still talking.

**Lex Fridman**

And there's another complexity sneaking up into the picture in the form of artificial intelligence and in cyber war, but also in hot war, the use of autonomous weapons. All of it starts becoming super complicated as we delegate some of these decisions about war, including nuclear war to more and more autonomy and artificial intelligence systems, is going to be a very interesting century. Do you just zoom out a little bit, hope that we become a multi-planetary species?

**Annie Jacobsen**

I'm all for adventure.

**Lex Fridman**

And I too while am for adventure, I'm all for backups in all forms. So I hope that human start a civilization on Mars and beyond out in space. And if you zoom on across all of it, what gives you hope about human civilization, about this whole thing we have going on here?

**Annie Jacobsen**

I mean, I am a fundamentally optimistic person. I must have come out of the shoot that way. Because I just am. Even though I write about really grim things, I get inspired by them because I do always believe in evolution. I also have the greatest family ever. Two kids, Jet and Finley, shout out to them. They're Lex Fridman fans.

**Lex Fridman**

Oh yeah, oh you guys.

**Annie Jacobsen**

And my husband. So what inspires me is this idea of legacy. I think that you always want to have your eye on being a good example to the best that you can and passing on what you know and believing in the next generation. And again, that's a sentiment echoed by all these

cold warriors I've been talking to because they also share that idea that, wow, look at what we have done as a civilization and look where we're going. Whether it's exoplanetary travel or AI. It's just that the human factor of the desire to fight, the desire to have conflict, needs to be reconfigured, because with all these new technologies that we have, the peril is growing at an accelerating pace, perhaps faster than the average human can keep up with.

**Lex Fridman**

Well Annie, thank you for being a wonderful example of a great journalist, a great writer, a great human being. And I'm a big fan of yours. It's a huge honor to meet you, to talk with today. So thank you so much for talking today.

**Annie Jacobsen**

Thank you for having me.