

Annie Jacobsen – Area 51

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PROLOGUE

Area 51 is the nation's most secret domestic military facility. It is located in the high desert of southern Nevada, seventy-five miles north of Las Vegas. Its facilities have been constructed over the past sixty years around a flat, dry lake bed called Groom Lake. The U.S. government has never admitted it exists. (8-10)

Building the bomb was the single most expensive engineering project in the history of the United States. It began in 1942, and by the time the bomb was tested, inside the White Sands Proving Ground in the New Mexico high desert on July 16, 1945, the bomb's price tag, adjusted for inflation, was \$28,000,000,000. The degree of secrecy maintained while building the bomb is almost inconceivable. When the world learned that America had dropped an atomic weapon on Hiroshima, no one was more surprised than the U.S. Congress, none of whose members had had any idea it was being developed. Vice President Harry Truman had been equally stunned to learn about the bomb when he became president of the United States, on April 12, 1945. (29-34)

The Manhattan Project employed two hundred thousand people. It had eighty offices and dozens of production plants spread out all over the country, including a sixty-thousand-acre facility in rural Tennessee that pulled more power off the nation's electrical grid than New York City did on any given night. And no one knew the Manhattan Project was there. That is how powerful a black operation can be. (38-41)

In 1994, for instance, when President Clinton created by executive order the Advisory Committee on Human Radiation Experiments to look into secrets kept by the Atomic Energy Commission, certain records involving certain programs inside and around Area 51 were kept from the president on the grounds that he did not have a need-to-know. (55-57)

CHAPTER ONE

The Riddle of Area 51

According to most members of the black world who are familiar with the history of Area 51, the base opened its doors in 1955 after two CIA officers, Richard Bissell and Herbert Miller, chose the place to be the test facility for the Agency's first spy plane, the U-2. (80-82)

Area 51's first customer was not the CIA but the Atomic Energy Commission. (83-84)

There, at an outpost facility Lazar says was called S-4, he was processed through a security system far more intense than the one he'd been subjected to just a little earlier, at Area 51's primary base. He signed one document allowing his home telephone to be monitored and another that waived his

constitutional rights. Then he was shown a flying saucer and told it would be his job to reverse engineer its antigravity propulsion system. (190-93)

During the first week of July 1947, in the middle of a powerful lightning storm, something crashed onto a rancher's property outside Roswell, New Mexico. The rancher, named W. W. Brazel, had been a famous cowboy in his earlier days. (256-58)

It turned out that a lot more had happened in Roswell, New Mexico, in the first and second weeks of July 1947 than just a weather-balloon crash. For starters, large numbers of the military had descended upon the town. W. W. Brazel was jailed for almost a week. Some witnesses saw military police loading large boxes and crates onto military trucks. Other witnesses saw large boxes being loaded onto military aircraft. (277-80)

The majority of the stories relayed by the sixty-two witnesses to UFO researchers Friedman and Moore all had two factors in common. The first was that the crash, which included more than one crash site, involved a flying saucer, or round disc. The second assertion was jaw-dropping. Witnesses said they saw bodies. Not just any old bodies but child-size, humanoid-type beings that had apparently been inside the flying saucer. These aviators had big heads, large oval eyes, and no noses. The conclusion that the majority of the witnesses drew for the UFO researchers was that these child-size aviators were not from this world. (281-85)

The true and uncensored story of Area 51 spans more than seven decades. The Roswell crash is but a thread, and Area 51 itself—the secret spot in the desert—has its origins in places and events far outside the fifty square miles of restricted airspace now known as the Box. (298-300)

CHAPTER TWO

Imagine a War of the Worlds

On Halloween eve in 1938, mass hysteria descended upon New Jersey as CBS Radio broadcast a narrative adaptation of Victorian-era science fiction novel *The War of the Worlds*. Listening to the live radio play, many people became convinced that Martians were attacking Earth, in New Jersey, and killing huge numbers of Americans. (301-4)

It was nighttime on the Rio Grande, May 29, 1947, and Army scientists, engineers, and technicians at the White Sands Proving Ground in New Mexico were anxiously putting the final touches on their own American secret weapon, called Hermes. The twenty-five-foot-long, three-thousand-pound rocket had originally been named V-2, or *Vergeltungswaffe 2*, which means “vengeance” in German. But Hermes sounded less spiteful—Hermes being the ancient Greek messenger of the gods. (512-16)

But within hours of Chandler's sweep of the skies, one of the flying objects crashed near Roswell, New Mexico. Immediately, the office of the Joint Chiefs of Staff, or JCS, took command and control and recovered the airframe and some propulsion equipment, including the crashed craft's power plant, or energy source. The recovered craft looked nothing like a conventional aircraft. The vehicle had no tail and it had no wings. The fuselage was round, and there was a dome mounted on the top. In secret Army

intelligence memos declassified in 1994, it would be referred to as a “flying disc.” Most alarming was a fact kept secret until now—inside the disc, there was a very earthly hallmark: Russian writing. Block letters from the Cyrillic alphabet had been stamped, or embossed, in a ring running around the inside of the craft. (565-71)

Based on the testimony of America’s Paperclip scientists, Army intelligence officers believed that the flying disc was the brainchild of two former Third Reich airplane engineers, named Walter and Reimar Horten— now working for the Russian military. Orders were drawn up. The manhunt was on. (605-7)

From the Paperclip scientists at Wright Field, the Army intelligence investigators learned that Hitler was rumored to have been developing a faster-flying aircraft that had been designed by the brothers and was shaped like a saucer. (610-12)

The Horten brothers had indeed been working on a flying saucer–like craft in Heiligenbeil, East Prussia, right after the war, Wendel said. The airplane was ten meters long and shaped like a half-moon. It had no tail. The prototype was designed to be flown by one man lying down flat on his stomach. It reached a ceiling of twelve thousand feet. Wendel drew diagrams of this saucerlike aircraft, as did a second German informant named Professor George, who described a later-model Horten as being “very much like a round cake with a large sector cut out” and that had been developed to carry more than one crew member. The later-model Horten could travel higher and faster—up to 1,200 mph—because it was propelled by rockets rather than jet engines. Its cabin was allegedly pressurized for high-altitude flights. (639-44)

Whatever else officially exists on the Horten brothers and their advanced flying saucer continues to be classified as of 2011, and the crash remains from Roswell quickly fell into the blackest regions of government. (677-79)

CHAPTER THREE

The Secret Base

The Korean War has often been called the forgotten war. In its simplest terms, it was a war between North Korea and South Korea, but it was also the first trial of technical strength and scientific prowess between two opposing teams of German-born scientists specializing in aviation. One group of Germans worked for America now, as Paperclip scientists, and the other group worked for the Soviet Union, and the jet-versus-jet dogfights in the skies above Korea were fights between American-made F-86 Sabres and Soviet-made MiG-15s, both of which had been designed by Germans who once worked for Adolf Hitler. (707-11)

Area 51 had its first residents. It was a small group of four Lockheed test pilots, two dozen Lockheed mechanics and engineers, a handful of CIA officers who doubled as security guards, and a small group of Lieutenant Colonel Ritland’s Air Force staff. (780-81)

But as rustic as the base was as far as appearance, behind the scenes Area 51 was as much Washington, DC, as it was Wild West. The U-2 was a top secret airplane built on the covert orders of the president of the United States. Its 1955 budget was \$22 million, which would be \$180 million in 2011. (791-93)

The aircraft's aluminum skin was paper-thin, just 0.02 inches thick, which meant the aircraft was both fragile on the ground and extremely delicate to fly. If a pilot flew the U-2 too slow, the airplane could stall. If he flew too fast, the wings could literally come off. Complicating matters was the fact that what was too slow at one altitude was too fast at another height. The same variable occurred when the weight of the plane changed as it burned up hours of fuel. For these reasons, the original flights made by the test pilots were restricted to a two-hundred-mile radius from the center of Groom Lake. The likelihood of a crash was high, and the CIA needed to be able to keep secure any U-2 wreckage. (805-10)

The pilots wore specially designed partial-pressure suits, tight like wet suits, with most of the tubing on the outside; it took two flight surgeons to get a pilot into his suit. Prebreathing pure oxygen was mandatory and took two full hours, which made for a lot of time in a recliner. The process removed nitrogen from the pilot's bloodstream and reduced the risk of decompression sickness at high altitude. (817-20)

The crash was the first of a series of Area 51-related airplane tragedies that would occur over the next decade. Airplane crashes, sensational by nature, risk operational exposure, and between crash investigators and local media, there are countless opportunities for leaks. That first airplane crash, into Mount Charleston, set a precedent for the CIA in an unexpected way. The Agency did what it always does: secured the crash site immediately and produced a cover story for the press. But an interesting turn of events unfolded, ones that were entirely beyond the CIA's control. Hungry for a story and lacking any facts, the press put together its own, inaccurate version of events. One of the city's leading papers, the Las Vegas Review Journal, reported that the crash was being kept secret because the men on board were most likely nuclear scientists working on a top secret new weapons project at the Nevada Test Site. Reporters stopped asking questions and the speculative story quickly became accepted as fact. The CIA would learn from this experience: it could use the public's preconceptions as well as the media's desire to tell a story to its own benefit. Civilians could unwittingly propagate significant disinformation on the CIA's behalf. (925-34)

In Central Intelligence Agency parlance, there are two kinds of strategic deception: cover and disinformation. Cover induces the belief that something true is something false; disinformation aims to produce the belief that something false is in fact true. (934-35)

CHAPTER FOUR

The Seeds of a Conspiracy

As soon as the U-2s started flying out of Area 51, reports of UFO sightings by commercial airline pilots and air traffic controllers began to inundate CIA headquarters. Later painted black to blend in with the sky, the U-2s at that time were silver, which meant their long, shiny wings reflected light down from the

upper atmosphere in a way that led citizens all over California, Nevada, and Utah to think the planes were UFOs. (945-48)

According to a CIA study on UFOs, declassified in 1997, the Air Force had originally been running two programs. One was covert, initially called Project Saucer and later called Project Sign; another was an overt Air Force public relations campaign called Project Grudge. The point of Project Grudge was to “persuade the public that UFOs constituted nothing unusual or extraordinary,” and to do this, Air Force officials went on TV and radio dismissing UFO reports. Sightings were attributed to planets, meteors, even “large hailstones,” Air Force officials said, categorically denying that UFOs were anything nefarious or out of this world. (955-60)

In 1951, Hollywood released the film *The Day the Earth Stood Still*, about aliens preparing to destroy Earth. Two years later, *The War of the Worlds* was made into a movie and won an Academy Award. Even the famous psychiatrist Carl Jung got into the act, publishing a book that said UFOs were individual mirrors of a collective anxiety the world was having about nuclear annihilation. Sightings continued and so did intense interest by both the Air Force and the CIA. (962-65)

The conundrum for Smith when he took over the role of director of Central Intelligence on August 21, 1950, was that very few people at the CIA had a need-to-know what the general now knew regarding unidentified flying objects. The record that has been declassified thus far suggests that Bedell Smith demanded that all his employees accept what his personal experiences with the Russians and “UFOs” had taught him: the Communists were evil, and this idea that UFOs were coming from other planets was nothing but the fantasy of panicked, paranoid minds. General Smith summarily rejected the idea that UFOs were anything out of this world and he spearheaded CIA policy accordingly. “Preposterous,” he wrote in a memo in 1952. Unlike Dulles, Bedell Smith personally oversaw the national security implications regarding UFOs at the CIA. (994-99)

According to CIA documents declassified in 1993, the Agency proposed a vast “debunking” campaign to reduce the public’s interest in flying saucers. The only way of countering what Bedell Smith was certain was the Russians’ “clever hostile propaganda” was for the CIA to take covert action of its own. The Agency suggested that an educational campaign be put in place, one that would co-opt elements of the American “mass media such as television, motion pictures, and popular articles.” The CIA also suggested getting advertising executives, business clubs, and “even the Disney Corporation [involved] to get the message across.” One plan was to present actual UFO case histories on television and then prove them wrong. (1022-27)

For Air Force investigators, the UFO explanations trickled in. One group of scientists assigned to Holloman Air Force Base, located on the White Sands Missile Range and home to the Paperclip scientists, determined many of the sightings were observations of V-2 rocket contrails. Other sightings were determined to be shooting stars, cosmic rays, and planets visible in the sky. Another study group concluded that some responsibility fell on birds, most commonly “flocks of seagulls or geese.” (1059-62)

Ultimately, the Air Force concluded for the National Security Council that “almost all sightings stemmed from one or more of three causes: mass hysteria and hallucination; misinterpretation of known objects;

or hoax.” The sightings that couldn’t be explained this way went up the chain of command, where they were interpreted by a few individuals who had been cleared with a need-to-know. In the mid-1950s, this included the elite group over at the CIA working under Todos Odarenko, analysts responsible for matching the CIA’s U2 flights with Air Force unknowns. (1070-74)

The CIA had also been trailing a colleague of Riedel named George P. Sutton, a fellow North American Aviation rocket scientist and ufologist. When Sutton gave a lecture entitled “Rockets Behind the Iron Curtain,” the CIA was shocked to learn that the flying saucer group seemed to know more about UFO sightings inside the Soviet Union than the entire team of CIA agents who had been tasked with monitoring that same information. (1122-25)

By 1957, according to the CIA monograph “CIA’s Role in the Study of UFOs,” the U-2s accounted for more than half of all UFO sightings reported in the continental United States. (1133-35)

CHAPTER FIVE

The Need-to-Know

In 2011, most Americans still don’t know what the NRO is or what it does, or that it is a partner organization routinely involved with Area 51, because that is classified information. (1156-57)

Across the world, the Russians were busy working on their own form of espionage. If Area 51 had a Communist doppelgänger, it was a remote top secret facility forty miles northeast of Moscow called NII-88. There, a rocket scientist named Sergei Korolev—the Soviet Union’s own Wernher Von Braun—was working on a project that would soon shame American military science and propel the arms and space race into a sprint. Fearing the CIA would assassinate Russia’s key rocket scientist, Stalin declared Sergei Korolev’s name a state secret, which it remained until his death, in 1966. Sergei Korolev was only referred to as Chief Designer, not unlike the way Richard Bissell was known to employees outside the CIA only as Mr. B. Just as insiders called Area 51 the Ranch, NII88 was known to its scientists as the Bureau. Like Area 51, NII-88 did not exist on the map. Before the Communist Revolution, NII-88 had been a small village called Podlipki, same as the Groom Lake area had once been a little mining enclave called Groom Mine. Both facilities began as outcroppings of tents and warehouses, accessible only to a short list of government elite. Both facilities would develop into multimillion-dollar establishments where multibillion-dollar espionage platforms would be built and tested, each having the singular purpose of outperforming what was being built on the other side. (1200-10)

To prove how accurate the camera was, Bissell had sent a U-2 from Groom Lake on a flight over President Eisenhower’s Pennsylvania farm. From thirteen and a half miles up, the U-2’s cameras were able to take clear photographs of Eisenhower’s cows as they drank water from troughs. (1303-5)

Stockman’s photos made the CIA ecstatic and justified the entire U-2 program, as a flurry of top secret memos dated July 17, 1956, revealed. “For the first time we are really able to say that we have an understanding of what was going on in the Soviet Union, on July 4, 1956,” Miller wrote. But as beneficial as Stockman’s flight was for the CIA, the results proved disastrous for President Eisenhower’s

relationship with Nikita Khrushchev. Despite Bissell's assurances to the contrary, the U-2s were tracked by the Soviets' airdefense warning systems from the moment they hit the radar screens. Once the film from Stockman's flight was developed, CIA photo interpreters determined that the Soviets had attempted more than twenty interceptions of Stockman's mission. "MiG-17 and MiG-19 fighters were photographed desperately trying to reach the U-2, only to have to fall back to an altitude where the air was dense enough for them to restart their flamed-out, oxygen starved engines," photo interpreter Dino Brugioni told Air and Space magazine after the U-2 program was declassified, in 1998. (1318-26)

In 1980, journalist Linda Hunt published an article in the Bulletin of the Atomic Scientists revealing publicly for the first time that several of the nation's leading German American aerospace doctors had previously worked at Nazi concentration camps. There, they had obtained aviation medicine data by conducting barbaric experiments on thousands of Jews, Poles, Gypsies, and other people considered disposable. (1392-95)

At Turner Air Force Base, Bevacqua had learned to fly F-84s the Air Force way. That meant first diligently studying the aircraft manuals, then practicing in a flight simulator, then practicing in a trainer, and finally going up in the airplane with an instructor. At Area 51, there was no manual for the U-2, no flight simulator, no trainer, and no instructor. "The original U-2s had only one seat and one engine, which meant the CIA instructor pilot gave you a lesson with your feet on the ground," Bevacqua explains. Flying this strange and secret spy plane came without a morsel of bureaucracy, never mind basic rules, making the overall experience profound. "You were basically given a talk by an instructor pilot. Then you were given a piece of cardboard with a checklist on the front side, and fuel and oxygen graphs on the back. Then it was time to fly. And that was that." (1406-12)

EG&G is an enigma in its own right. Beginning in 1947, EG&G was the most powerful defense contractor in the nation that no one had ever heard of. In many ways, this still remains the case in 2011. (1425-27)

For decades a great majority of the most highly classified engineering jobs related to nuclear weapons testing went to EG&G. In the 1960s, when special engineering teams were needed to clean up deadly radioactive waste that was the result of these nuclear tests, the contracts went to EG&G as well. (1441-43)

He was losing control of the U-2 spy plane program and everything he had created at Area 51. His next idea, part genius and part hubris, was to petition the president for an entirely new spy plane. (1460-61)

Bringing an entirely new black budget spy plane program to the president's attention at a time when the president was upset with the results of the previous work done at Area 51 was either madness or brilliance, depending on one's point of view. But just as Richard Bissell began presenting plans for his radical and ambitious new project to the president, a national security crisis overwhelmed the country. On October 4, 1957, the Soviets launched the world's first satellite, a 184-pound silver orb called Sputnik 1. (1464-67)

CHAPTER SIX

Atomic Accidents

Richard Bissell once said that setting up Area 51 inside a nuclear testing facility kept the curiosity-seekers at bay. With Operation Plumbbob, a 1957 atomic test series that involved thirty consecutive nuclear explosions, he got more than he bargained for. (1491-93)

Code-named the 57 Project, and later Project 57, the Atomic Energy Commission, the U.S. Air Force, and EG&G would work together to simulate an Air Force airplane crash involving an XW-25 nuclear warhead—a crash in which radioactive particles would “accidentally” be dispersed on the ground. The land around the mock crash site would be contaminated by plutonium, which, according to scientists, would take 24,100 years to decay by half. At the time, scientists had no idea what accidental plutonium dispersal in open air would do to beings and things in the element’s path. (1501-5)

In five short years, from January 1951 to January 1956, a total of forty-nine nuclear bombs were exploded at the Nevada Test Site, bringing the worldwide total for atmospheric nuclear explosions by the United States to eighty-five. (1615-16)

Plutonium is a poison of paradox. It can be touched without lethal effects. Because it emits alpha particles, the weakest form of radiation, plutonium can be blocked from entering the body by a layer of paper or a layer of skin. Equally incongruous is the fact that plutonium is not necessarily lethal if ingested. “Once in the stomach, its stay in the body is short, for [particles] are excreted as an inert material with virtually no body assimilation,” read another report. In other words, plutonium is deadly for humans and animals only if particles reach the lower respiratory tract. (1702-6)

Just two weeks before Project 57 contaminated 895 acres adjacent to Groom Lake with plutonium, Nobel Prize winner Linus Pauling made a statement that spooked the public and threatened the tests. Pauling said that as a result of nuclear tests, 1 percent of children born the following year would have serious birth defects. The Atomic Energy Commission responded by positioning their own doctors’ opinions prominently in the news. Dr. C. W. Shilling, deputy director of biology and medicine for the Atomic Energy Commission, ridiculed Linus Pauling, saying that “excessively hot baths can be as damaging to the human sex glands as radioactive fallout in the amount received in the last five years from the testing of atomic weapons.” In hindsight, this is astonishingly erroneous, but at the time it was what Americans were willing to believe. (1740-45)

The Hiroshima bomb, which killed seventy thousand people instantly and another thirty to fifty thousand by radiation poisoning over the next few days, was less than half the size of what the U.S. government was now calling “low yield.” (1760-62)

Not only the yield size of Hood was classified; so was the fact that despite the Atomic Energy Commission’s assurance that it was not testing thermonuclear bombs, Hood was a thermonuclear bomb test. At seventy-four kilotons, it was six times bigger than the bomb dropped on Hiroshima and remains in 2011 the largest bomb ever exploded over the continental United States. The flash from the Hood bomb was visible from Canada to Mexico and from eight hundred miles out at sea. “So powerful was the blast that it was felt and seen over most of the Western United States as it lighted up the pre-dawn

darkness,” reported the United Press International. It took twenty-five minutes for the nuclear blast wave to reach Los Angeles, 350 miles to the west. (1810-15)

CHAPTER SEVEN

From Ghost Town to Boomtown

As impossible as it is to imagine in the twenty-first century, in the early days of atomic testing there was no such thing as HAZMAT suits for workers performing tasks in environments laden with WMD. Instead, workers combed the desert floor dressed in white lab coats and work boots, looking for particles of nuclear fallout. According to Atomic Energy Commission documents made public in 1993, this radioactive debris varied in size, from pinhead particles to pencil-size pieces of steel. Much to the surprise of the nuclear scientists, the atomic weapons tests revealed that sometimes, in the first milliseconds of destruction, the atomic energy actually jettisoned splintered pieces of the bomb tower away from the intense heat, intact, before vaporization could occur. These highly radioactive pieces were then carried aloft in the clouds and deposited down on places like Groom Lake, and Atomic Energy Commission workers could then locate them with magnets. (1851-59)

From September 12 to October 30, 1958, an astonishing thirty-seven nuclear bombs were exploded—from tops of tall towers, in tunnels and shafts, on the surface of the earth, and hanging from balloons. (1861-62)

Although Lovick had no idea at the time, he was being invited into Lockheed’s classified group, officially called Advanced Development Projects but nicknamed the Skunk Works. In 1957, its primary customer was the CIA. (1884-86)

It is so quiet inside the chamber that if a person stands alone inside its four walls, he can hear the blood flowing inside his body. “Particularly loud is the blood in one’s head,” (1932-33)

At night, workers needed to bundle up in heavy coats and wool hats. But during the day, temperatures could reach 120 degrees. “Once, I saw a coyote chasing a rabbit and they were both walking,” Lovick recalls. (1989-90)

Across the world, at NII-88, Sergei Korolev had designed a Soviet spy satellite called Object D, but the CIA did not know what exactly it was capable of. Also under way was a follow-on espionage platform called Zenit, a modified version of the Vostok spacecraft that had been equipped with cameras to photograph American military installations from space. (2054-56)

CHAPTER EIGHT

Cat and Mouse Becomes Downfall

Colonel Shelton extended his hand and opened his palm. At the center was a large silver coin. “Do you want the silver dollar?” the colonel asked Powers. What Shelton was offering was no ordinary American coin. It was a CIA suicide gadget, designed to conceal a tiny poison pin hidden inside. The pin, which the

pilot could find in his pocket by rubbing a finger gently around the coin's edge, was coated with a sticky brown substance called curare, the paralytic poison found in lethal Amazonian blowpipes. One prick of the poison pin and a pilot would be dead in seconds. (2092-95)

In 1960, American presidents were expected to be truth tellers; there was no public precedent for lying. (2218-19)

Immediately after Gary Powers had been shot down in his U-2 and picked up by the Soviets, he was flown from Sverdlovsk to Moscow, where he was put in a cell inside Lubyanka Prison, which doubled as headquarters for the KGB. There, his interrogation began. (2230-32)

Not before the publication of this book has it been understood that the KGB clearly knew about Area 51 during the Powers trial. (2241-42)

After a three-day trial, the Soviets determined that Gary Powers, having been caught spying on Russia, exposed the United States for what it really was: "an enemy of the peace." Powers was sentenced to ten years in prison. President Eisenhower was judged to be a "follower of Hitler," the lowest insult in the Russian lexicon. Hitler had double crossed Khrushchev's predecessor, Joseph Stalin, in 1941, and the result of that double cross was twenty million Russians dead. In comparing Eisenhower to Hitler, Khrushchev was sending a clear message: diplomacy was off the table. The upcoming east-west summit in Paris was canceled. (2247-52)

At Lockheed, each Mach 3 aircraft was literally being hand forged, part by part, one airplane at a time. The production of the aircraft, according to Richard Bissell, "spawned its own industrial base. Special tools had to be developed, along with new paints, chemicals, wires, oils, engines, fuel, even special titanium screws. By the time Lockheed finished building the A-12, they themselves had developed and manufactured thirteen million different parts." It was the titanium that first held everything up. Titanium was the only metal strong enough to handle the kind of heat the Mach 3 aircraft would have to endure: 500- to 600-degree temperatures on the fuselage's skin and nearly 1,000 degrees in places close to the engines. (2264-69)

As workers toiled away at Area 51 getting ready for the arrival of the Oxcart spy plane, Richard Bissell focused on his orders to rid Cuba of Fidel Castro. (2372-73)

When the Bay of Pigs operation was over, hundreds of CIA-trained, anti-Castro Cuban exiles were killed on approach or left to die on the beachhead at the Bay of Pigs. Those that lived to surrender were imprisoned and later ransomed back to the United States. When the story became public, so did brigade commander Pepe San Roman's last words before his capture: "Must have air support in the next few hours or we will be wiped out. Under heavy attacks by MiG jets and heavy tanks." Pepe San Roman begged Richard Bissell for help. "All groups demoralized... They consider themselves deceived." By the end of the day, Richard Bissell's world had begun to fall irreparably apart. The Bay of Pigs would be his downfall. (2389-94)

CHAPTER NINE

The Base Builds Back Up

Two thermonuclear devices, called Teak and Orange, each an astonishingly powerful 3.8 megatons, were exploded in the Earth's upper atmosphere at Johnston Atoll, 750 miles west of Hawaii. Teak went off at 252,000 feet, or 50 miles, and Orange went off at 141,000 feet, 28 miles, which is exactly where the ozone layer lies. In hindsight, it was a ludicrous idea. "The impetus for these tests was derived from the uncertainty in U.S. capability to discern Soviet high-altitude nuclear detonation," read one classified report. Killian was in charge of the tests, and his rationale for authorizing them was that if sometime in the future the Soviets were to detonate a high-altitude nuclear bomb, our scientists would need to know what to look for. Instead of being difficult to detect, a nuclear bomb exploding in the ozone layer was instantly obvious in horrific and catastrophic ways. The fireballs produced by both Teak and Orange burned the retinas of any living thing that had been looking up at the sky without goggles within a 225-mile radius of the blast, including hundreds of monkeys and rabbits that Killian authorized to be flown in airplanes nearby. The animals' heads had been locked in gadgets that forced them to witness the megaton blast. From Guam to Wake Island to Maui, the natural blue sky changed to a red, white, and gray, creating an aurora 2,100 miles along the geomagnetic meridian. Radio communication throughout a swath of the Pacific region went dead. (2535-45)

Killian's high-altitude nuclear tests did not stop there. Two weeks later, another ultrasecret nuclear weapons project called Operation Argus commenced. Killian's nuclear bomb tests had now expanded to include outer space. "Argus was an unusual operation," a Defense Nuclear Agency summary from 1993 recalls. "It was completed in less than six months after Presidential approval, and it was completed in complete secrecy. Nuclear tipped missiles were fired from ships for the first time." Oblique words used to conceal another one of the most radical, covert science experiments conducted by man. On August 27, August 30, and September 6, 1958, three nuclear warheads were launched from X-17 rockets from the deck of the USS Norton Sound as the warship floated off the coast of South Africa in the South Atlantic Ocean. Up went the missiles and the warheads until they exploded approximately three hundred miles into space. This "scientific experiment" was the brainchild of a Greek elevator operator turned physicist, Nicholas Christofilos. Christofilos convinced Killian that a nuclear explosion occurring above the Earth's atmosphere—but within the Earth's magnetic field—might produce an electronic pulse that could hypothetically damage the arming devices on Soviet ICBM warheads trying to make their way into the United States. While the phenomenon did occur in minutiae, meaning the arming devices registered "feeling" the pulse from the nuclear blast, Christofilos was wrong about the possibility that this would actually stop in coming enemy nuclear missiles in their tracks. In other words, the tests failed. To cover his tracks as to the sheer waste and recklessness of the experiment, in the month following the nuclear detonation in space, Killian wrote a memo to President Eisenhower attempting to put a congratulatory spin on how quickly the project occurred and how terrific it was that secrecy was maintained. Dated November 3, 1958, Killian's letter began by describing Argus as "probably the most spectacular event ever conducted." More egregious self-congratulation came next: "The experiment was in itself an extraordinary accomplishment. Especially notable was the successful launching of a large, solid-fuel rocket carrying a nuclear payload from the heaving deck of a ship in the

squally South Atlantic. Scarcely less so is the fact that the whole experiment was planned and carried out in less than five months... Impressive, too, is the fact that no leaks have occurred.” (2568-96)

If American citizens were in the dark about the megaton thermonuclear weapons tests being conducted by the American military in space, the Russians certainly were not. They forged ahead with an unprecedented weapons test of their own. On October 30, 1961, the Soviet Union detonated the largest, most powerful nuclear weapon the world had ever known. Called the Tsar Bomba, the hydrogen bomb had an unbelievable yield of fifty megatons, roughly ten times the amount of all the explosives used in seven years of war during World War II, including both nuclear bombs dropped on Hiroshima and Nagasaki. Tsar Bomba, detonated over northern Russia, flattened entire villages in surrounding areas and broke windows a thousand miles away in Finland. Anyone within a four hundred-mile radius who was staring at the blast would have gone blind. Soviet leader Nikita Khrushchev told the United Nations Assembly that the purpose of the test was to “show somebody Kuzka’s mother”—to show somebody who’s boss. (2612-18)

CHAPTER TEN

Wizards of Science, Technology, and Diplomacy

As for all the remarkable things the aircraft had been meticulously designed to do, it wasn’t able to do any of them yet. Sitting on the tarmac, the aircraft was 160,000 pounds of titanium outfitted with millions of dollars’ worth of expensive equipment that no one yet knew how to work, certainly not above seventy thousand feet. Like its predecessor the U2, the Oxcart was an aircraft without a manual. Unlike the U-2, this aircraft was technologically forty years ahead of its time. Some of the records the Oxcart would soon set would hold all the way into the new millennium. (2642-46)

“I remember thinking, This is cool. And then, all of a sudden, as Schalk rose up in the air, pieces of the airplane started to fall off!” The engineers standing next to Martin panicked. Harry Martin thought for sure the airplane was going to crash. But Lou Schalk kept flying. The pieces of the airplane were thin slices of the titanium fuselage, called fillets. Their sudden absence did not affect low-altitude flight. Schalk flew for forty minutes and returned to Area 51. It was mission accomplished for Schalk but not for the engineers. They spent the next four days roaming around Groom Lake attempting to locate and reattach the pieces of the plane. Still, it was a milestone for the CIA. Three years, ten months, and seven days had passed since Kelly Johnson first presented his plans for a Mach 3 spy plane to Richard Bissell, and here was the Oxcart, finally ready for its first official flight. (2657-63)

On October 14, an Air Force pilot flying a CIA U-2 brought home film footage of Cuba that the White House needed to see. Photographs showing nuclear missiles supplied by the Soviet Union and set up on missile stands in Cuba. Those eight canisters of film brought back by the CIA’s U-2 set in motion the Cuban missile crisis, bringing the world closer than it had ever come to all-out nuclear war. (2759-62)

CHAPTER ELEVEN

What Airplane?

Having a stable marriage and family had become a CIA-pilot mandate during Oxcart, something that was not in place during the U-2. It was Gary Powers's alcoholic wife who'd triggered the change. Some in the Agency believed she put the secrecy of the entire U-2 program at risk with behavior that even they could not control. (2774-76)

Flying into the restricted airspace above the Nevada Test Site, Collins would look out the window and make a mental note of the ever-growing landscape of giant craters. The appearance of a new, moonlike subsidence crater was often a weekly occurrence now that nuclear testing had moved underground. (2791-93)

Collins hadn't been told that the A-12 Oxcart ejection system had two separate parachutes. The first parachute, or drogue, was small enough to slow the pilot down and get him to an altitude of fifteen thousand feet. Then the drogue chute would jettison away in advance of the main parachute deploying. This large, thirty-five-foot-diameter landing aid was the one most pilots were familiar with. (2848-50)

He'd been briefed on what to do in a security breach such as this one, given a cover story by the Agency that fit perfectly with the proximity to the Nevada Test Site—and with the times. Collins told the ranchers that his aircraft was an F-105 fighter jet and that it had a nuclear weapon on board. The men's expressions changed from helpful to fearful. (2863-65)

Designated the RS-71 Blackbird, this now-famous aircraft had its letter designation accidentally inverted by President Lyndon B. Johnson in a public speech. Since the president is rarely ever "corrected," the Air Force changed its letter designation, which is how the SR-71 Blackbird got its name. (Originally, the letters stood for "Reconnaissance/Strike.") (2952-54)

The Air Force's Mach 3 airplanes were a far cry from President Eisenhower's original idea to let the CIA create a spy plane with which to conduct espionage missions designed to prevent nuclear war. This new Air Force direction underscored the difference in the two services: the CIA was in the business of spying, and the Air Force was in the business of war. (2955-57)

When a fleet of eighty-five of these giant supersonic bombers was first proposed to Congress, LeMay, then head of the Strategic Air Command, had his proposition met with cheers. But the Gary Powers shoot down in May of 1960 had exposed the vulnerability of LeMay's B-70 bombers, which would fly at the same height as the U-2. (2960-62)

The Pentagon already had a catchy name for its versions of the Oxcart. They would call them Blackbirds. Black because they had been developed in the dark by the CIA, and birds because they could fly. The meeting touched off the long running battle between the two agencies over control of Area 51 and control of any U.S. government asset with wings. But this is exactly what had happened with the U-2. The CIA did all of the heavy lifting to get the aircraft aloft, only to have the program eventually taken over by the Pentagon for the Air Force. (2978-82)

The J-58 jet engines built by Pratt and Whitney had taken forever to finish but now they were ready to fly. In January of 1963 they were finally delivered to the Ranch. A host of new problems occurred when

the engines were first powered up. In one instance, engineers suspected a foreign object was stuck in an engine's heart, called the power plant, and was damaging internal parts. An X-ray showed the outline of a pen that had fallen into the engine's cover, called a nacelle, during final assembly in Burbank. From then on, Lockheed workers got coveralls without breast pockets. There were other problems. The engines worked like giant vacuums. Once powered up on the tarmac, they sucked in every loose object lying around, including rocks and metal screws. As a solution, Area 51 workers took to sweeping and then vacuuming the runway before each flight. It was a tedious but necessary job. (2986-92)

Chuck Yeager is credited with breaking the sound barrier in 1947, but every time a new aircraft moves through the speed of sound, which is 768 miles per hour, complications can arise. In the case of the Oxcart, the sonic shock unexpectedly caused the fuselage to flex in such a way that many structural parts became dangerously compromised. These parts had to be redesigned and replaced. (2996-98)

With President Kennedy dead, Lyndon Johnson would be briefed on the CIA's secret domestic base by CIA director John McCone on his eighth day as commander in chief. (3018-19)

CHAPTER TWELVE

Covering Up the Cover-Up

In the mid-1960s, sightings of unidentified flying objects around Area 51 reached unprecedented heights as the A-12 Oxcart flying from Groom Lake was repeatedly mistaken for a UFO. Not since the U-2 had been flying from there were so many UFO reports being dumped on CIA analysts' desks. The first instance happened only four days after Oxcart's first official flight, on April 30, 1962. (3030-32)

In total, 2,850 Oxcart flights would be flown out of Area 51 over a period of six years. Exactly how many of these flights generated UFO reports is not known, but the ones that prompted UFO sightings created the same kinds of problems for the CIA as they had in the previous decade with the U-2, only with elements that were seemingly more inexplicable. (3044-47)

The first pictorially recorded panic over a UFO event occurred in August of 1783, shortly after two French brothers named Joseph and Etienne Montgolfier secured patronage from the king of France to design and fly a hot-air balloon—the eighteenth-century version of a modern-day defense contract. During one of the Montgolfiers' early flight tests, a balloon got caught in a thunderstorm and crashed in a small French village called Gonesse. The peasants that inhabited the town thought the balloon was a monster attacking them from the sky. A pen-and-ink drawing from that time shows men with pitchforks and scythes ripping the crashed balloon to shreds. Townsfolk in the background can be seen running away, flailing their arms above their heads in fear. (3086-91)

CHAPTER THIRTEEN

Dull, Dirty, and Dangerous Requires Drones

The A-12 mother ship was designated M-21, Mas in mother, and was modified to include a second seat for the drone launch operator, a flight engineer. The D-21 was the name for the drone, the D standing for daughter. (3236-38)

The use of drones in warfare has its origins in World War II. Joseph Kennedy Jr., President Kennedy's older brother, died in a secret U.S. Navy drone operation against the Germans. The covert mission, dubbed Operation Aphrodite, targeted a highly fortified Nazi missile site inside Germany. The plan was for the older Kennedy to pilot a modified B-24 bomber from England and over the English Channel while his crew armed 22,000 pounds of explosives piled high in the cargo hold. Once the explosives were wired, the crew and pilot needed to quickly bail out. Flying not far away, a mother ship would begin remotely controlling the unmanned aircraft as soon as the crew bailed out. Inside the bomber's nose cone were two cameras that would help guide the drone into its Nazi target. (3287-93)

Just moments before Joseph Kennedy Jr. and his crew bailed out, the Torpex caught fire, and the aircraft exploded midair, killing everyone on board. (3294-95)

During the second set of atomic tests, called Operation Sandstone, in April of 1948, the drones were again used in a job deemed too dangerous for airmen. During an eighteen-kiloton atomic blast called Zebra, however, a manned aircraft accidentally flew through a mushroom cloud, and after this, the Air Force made the decision that because the pilot and crew inside the aircraft had "suffered no ill effects," pilots should be flying atomic-sampling missions, not drones. (3318-21)

The bomb was so large that it was built from the ground up, on an island on the north side of the atoll called Eluge lab. Given the extraordinary magnitude of the thermonuclear bomb, it is utterly remarkable to consider that shortly after Robinson flew his F-84G straight through its mushroom stem, he was able to radio back clear thoughts to his commanding officer, who was located twenty-five miles to the south, on Eniwetok. "The glow was red, like the inside of a red hot furnace," the record states Robinson said. He then described how his radio instrument meters were spinning around in circles, "like the sweep second hand on a watch." After going inside the cloud a second time, Robinson reported that his "airplane stalled out and gone [sic] into a spin." His autopilot disengaged and his radio cut out, but the courageous pilot flew on as instructed. (3368-74)

CHAPTER FOURTEEN

Drama in the Desert

In the six years since Sputnik, satellites had advanced to the degree that their spy images were good, though not great. But satellites had an inherent limitation in the world of espionage: they worked on fixed schedules. This would forever negate any element of surprise. The average satellite took ninety minutes to circle the world, and over flight schedules were easily determined by analysts at NORAD. The ironically named Oxcart was an attack espionage vehicle: quick and versatile, nimble and shrewd, with overpasses that would be totally unpredictable to any enemy. But most of all, in terms of clear photographic intelligence, nothing could compete with what Oxcart was about to be able to deliver to

the president: two-and-a-half-foot blocks of detail made clear by film frames shot from seventeen miles up. (3466-71)

By 1964, the government had exploded 286 nuclear bombs within shouting distance of Area 51. One year earlier, the United States and the Soviet Union had signed the Limited Test Ban Treaty prohibiting nuclear testing in the air, space, or sea. The initiative had been in the works for years but negotiations had repeatedly failed. Now that it was finally signed, testing had moved underground. Neither superpower trusted the other to honor the commitment for very long, and the number of tests per month actually accelerated after the treaty; the idea was to stay weapons-ready in the event one side broke the treaty. Between September 1961 and December 1964, a record-breaking 162 bombs were exploded at the Nevada Test Site inside underground tunnels and shafts. Nearly half of these explosions resulted in the “accidental release of radioactivity” into the atmosphere. (3562-68)

President Johnson had inherited Vietnam from President Kennedy when it was a political crisis and not yet a war. That changed in the second summer Johnson held office, in August of 1964, with the Gulf of Tonkin. (3664-65)

(In 2005 NSA released a detailed confession admitting that its intelligence had been “deliberately skewed to support the notion that there had been an attack.”) (3667-69)

CHAPTER FIFTEEN

The Ultimate Boys’ Club

After allegations surfaced that the CIA had been running a human-research program called MKULTRA—which involved mind-control experiments using drugs such as LSD—Helms as director of the CIA was asked to take the stand. While testifying to Congress, Helms stated that he had ordered all the MKULTRA files destroyed two years earlier, in 1973. (3753-56)

In a roomful of 303 Committee members, Slater was told the Oxcart would be terminated effective January 1, 1968. There was no room for debate. The Oxcart’s fate had been decided. (3870-71)

CHAPTER SIXTEEN

Operation Black Shield and the Secret History of the USS Pueblo

There, President Johnson and his closest advisers discussed foreign policy each week. Outsiders called the luncheons Target Tuesdays because so much of what was discussed involved which North Vietnamese city to bomb. In 1967, air battles were raging in the skies over Hanoi and Haiphong with so many more American pilots getting shot down than enemy pilots that the ratio became nine to one. (3919-22)

Kadena Air Base was located on the island of Okinawa just north of the Tropic of Cancer in the East China Sea. It was an island scarred by a violent backstory, haunted by hundreds of thousands of war dead. Okinawa had been home to the single largest land-sea-air battle in the history of the world. This

was the same plot of land where, twenty-two years earlier, the Allied Forces fought the Japanese. Okinawa was the last island before mainland Japan. Over the course of eighty-two days in the spring of 1945, the battle for the Pacific reached its zenith. At Okinawa, American casualties would total 38,000 wounded and 12,000 killed or missing. Japan's losses were inconceivable in today's wars: 107,000 soldiers dead and as many as 100,000 civilians killed. [...] When Lieutenant General Ushijima Mitsuru finally capitulated, giving the island over to U.S. forces on June 21, 1945, he did so with so much shame in his heart that he committed suicide the following day. Thousands of Okinawans felt the same way and leaped off the island's high coral walls. After the smoke settled and the blood soaked into the earth, Okinawa belonged to the U.S. military. Two decades later, it still did. (3938-46)

"We are beginning to win this struggle," Vice President Hubert Humphrey boasted on NBC's Today show in November of 1967. While closed-door hearings for the Senate Armed Services Committee revealed that U.S. bombing campaigns were having little to no effect on winning the war, Humphrey told America that more Communists were laying down arms than picking them up. (3996-98)

The 1129th Special Activities Squadron had reached its end. The CIA held a special secret ceremony at Area 51 for the remaining Oxcart pilots and their wives. (4109-10)

Because the Skyraider flew so slow, it was one of the easiest targets for the Vietcong. One in four Skyraiders sent on rescue missions was shot down. (4125-26)

CHAPTER SEVENTEEN

The MiGs of Area 51

Historically, reverse engineering has played an important role at Area 51, as exemplified in formerly classified programs, including one from the late 1960s and 1970s, to reverse engineer Russian MiGs. It began one scorching-hot morning in August of 1966 when an Iraqi Air Force colonel named Munir Redfa climbed into his MiG-21 fighter jet at an air base in southern Iraq and headed toward Baghdad. Redfa then made a sudden turn to the west and began racing toward Jordan. (4143-46)

Redfa flew over Turkey, then toward the Mediterranean. But his final destination was the enemy state of Israel. There, one million U.S. dollars was waiting for him in a bank account in Tel Aviv. (4150-51)

What Israel learned from Munir Redfa's MiG ultimately allowed them to overpower the combined air forces of Syria, Egypt, and Jordan during the Six-Day War. (4166-67)

The Israelis had been telling the State Department that they were in great danger from their Middle East neighbors when really, Helms explained to the president, Israel had the tactical advantage. Israel was playing the weak card in the hope of winning American military support. (4179-81)

The story of Redfa's defection made international headlines when it happened, in 1966. But what didn't make the news was what happened once Israel finished with the MiG: the Soviet-made fighter was shipped to Area 51. (4185-86)

Beatty, Nevada. Population somewhere around 426, depending on who wants to know. (4204-5)

In 1964, Beatty, Nevada, was one strange town. Situated 120 miles northwest of Las Vegas, it lay on a strip of land between Death Valley and Nevada's atomic bomb range. Beatty had one sheriff—he was eighty years old, was a great shot with a rifle, and was missing most of his teeth. Beatty also had nine gas stations, eleven churches, an airstrip, and a whorehouse called the Vicky Star Ranch. Behind the facade, Beatty housed a collection of three- and four-letter federal agencies, many of which were working different angles on various overt and covert operations there. (4205-09)

To get into the air, the X-15 was jettisoned off a B-52 mother ship, after which its rocket engine would launch it into the atmosphere like a missile until it reached the edge of space. Touching the tip of space, the X-15 would then turn around and “fly” home, getting up to speeds of Mach 6. (4228-30)

MiG had been nicknamed the doughnut because the jet fighter's nose had a round opening in it, like a doughnut's. (4303-4)

Barnes and his group passed the time by playing mind games with the Soviets. They painted strange shapes on the tarmac, “funny-looking impossible aircraft,” which they then heated up with portable heaters to confuse the Soviets who were shooting infrared satellite pictures of the work going on there. “We got a kick out of imagining what the Russians thought of our new airplanes,” Barnes says. (4341-43)

The ultrasecret MiG program at Area 51 gave birth to the Top Gun fighter-pilot school, a fact that would remain secret for decades. (4358-59)

CHAPTER EIGHTEEN

Meltdown

To this end, there is no shortage of death woven into the uncensored history of Area 51. One of the most dangerous tests ever performed there was Project 57, the dirty bomb test that took place five miles northwest of Groom Lake, in a subparcel called Area 13. (4368-70)

On the morning of January 17, 1966, a real-life dirty bomb crisis occurred over Palomares, Spain. A Strategic Air Command bomber flying with four armed hydrogen bombs—with yields between 70 kilotons and 1.45 megatons—collided midair with a refueling tanker over the Spanish countryside. (4382-84)

On January 21, 1968, an uncontrollable fire started on board a B-52G bomber during a secret mission over Greenland. Six of the seven crew members bailed out of the burning airplane, which crested over the rooftops of the American air base at Thule and slammed into the frozen surface of North Star Bay. The impact detonated the high explosives in at least three of the four thermonuclear bombs—similar to exploding multiple dirty bombs—spreading radioactive plutonium, uranium, and tritium over a large swath of ice. A second fire started at the crash site, consuming bomb debris, wreckage from the airplane, and fuel. After the inferno burned for twenty minutes the ice began to melt. One of the bombs fell into the bay and disappeared beneath the frozen sea. In November of 2008, a BBC News

investigation found that the Pentagon ultimately abandoned that fourth nuclear weapon after it became lost. (4424-31)

First came new handheld devices, like a briefcase called the Neutron Detector Suitcase, a prototype designed by EG&G, which was followed by more advanced means of detecting radiation, including ground vehicles. The Sky Scanner, developed by the Lawrence Radiation Laboratory at Livermore, roamed down the test site's dirt roads measuring radioactivity escaping from atomic vents. The Sky Scanner looked like a news van with a satellite dish, but inside it was full of equipment that could determine how much fallout was in the air. Next came fixed-wing aircraft that could patrol the air over an accident site. Used to detect fallout since Operation Crossroads, they were now equipped with state-of-the-art, still-classified radiation-detection devices. This marked the birth of a burgeoning new military technology that would become one of the most important and most secret businesses of the twenty-first century. (4444-51)

So secret are the record groups in EG&G's archives, even the president of the United States can be denied access to them, as President Clinton was in 1994. (4465-67)

So secret are the record groups in EG&G's archives, even the president of the United States can be denied access to them, as President Clinton was in 1994. One year earlier, a reporter named Eileen Welsome had written a forty-five-page newspaper story for the Albuquerque Tribune revealing that the Atomic Energy Commission had secretly injected human test subjects with plutonium starting in the 1940s without those individuals' knowledge or consent. When President Clinton learned about this, he created an advisory committee on human radiation experiments to look into secrets kept by the Atomic Energy Commission and to make them public. In several areas, the president's committee succeeded in revealing disturbing truths, but in other areas it failed. In at least one case, regarding a secret project at Area 51, the committee was denied access to records kept by EG&G and the Atomic Energy Commission on the grounds that the president did not have a need-to-know about them. In another case, regarding the nuclear rocket program at Area 25 in Jackass Flats, the president's committee also failed to inform the public of the truth. Whether this is because the record group in EG&G's archive was kept from the committee or because the committee had access to it but chose not to report the facts in earnest remains unknown. Instead, what happened at Jackass Flats, well after atmospheric testing had been outlawed around the world, gets a one-line reference in the Advisory Committee's 937-page Final Report, grouped in with dozens of other tests involving "intentional releases" near human populations. "At AEC sites in Nevada and Idaho, radioactive materials were released in tests of the safety of bombs, nuclear reactors, and proposed nuclear rockets and airplanes," the report innocuously reads. (4465-78)

Area 25 began as the perfect place for America to launch a nuclear-powered spaceship that would get man to Mars and back in the astonishingly short time of 124 days. The spaceship was going to be enormous, sixteen stories tall and piloted by one hundred and fifty men. Project Orion seemed like a space vehicle from a science fiction novel, except it was real. It was the brainchild of a former Los Alamos weapons designer named Theodore Taylor, a man who saw space as the last "new frontier." (4488-92)

Taylor's original idea was to dispense these bombs from the rear of the spaceship, the same as a Coke machine dispenses sodas. The bombs would fall out behind the spaceship, literally exploding and pushing the spaceship along. The Coca-Cola Company was even hired to do a classified early design. At Area 25, far away from public view, Taylor's giant spaceship would launch from eight 250-foot-tall towers. Blastoff would mean Orion would rise out of a column of nuclear energy released by exploding atomic bombs. (4505-9)

But when the Air Force took over the project, they had an entirely different vision in mind. ARPA and the Air Force reconfigured Orion into a space-based battleship. From high above Earth, a USS Orion could be used to launch attacks against enemy targets using nuclear missiles. (4510-12)

But no one built Orion. After atmospheric nuclear tests were banned in 1963, the project was indefinitely suspended. Still wanting to get men to Mars, NASA and the Air Force turned their attention to nuclear-powered rockets. From now on, there would be no nuclear explosions in the atmosphere at Jackass Flats— at least not officially. Instead, the nuclear energy required for the Mars spaceship would be contained in a flying reactor, with fuel rods producing nuclear energy behind barriers that were lightweight enough for space travel but not so thin as to cook the astronauts inside. The project was now called NERVA, which stood for Nuclear Engine Rocket Vehicle Application. The facility had a public name, even though no one from the public could go there. It was called the Nuclear Rocket Test Facility at Jackass Flats. A joint NASA/Atomic Energy Commission office was created to manage the program, called the Space Nuclear Propulsion Office, or SNPO. (4515-22)

And so, on January 12, 1965, the nuclear rocket engine code-named Kiwi was allowed to overheat. High-speed cameras recorded the event. The temperature rose to "over 4000°C until it burst, sending fuel hurtling skyward and glowing every color of the rainbow," Dewar wrote. Deadly radioactive fuel chunks as large as 148 pounds shot up into the sky. One ninety-eight-pound piece of radioactive fuel landed more than a quarter of a mile away. Once the explosion subsided, a radioactive cloud rose up from the desert floor and "stabilized at 2,600 feet" where it was met by an EG&G aircraft "equipped with samplers mounted on its wings." The cloud hung in the sky and began to drift east then west. "It blew over Los Angeles and out to sea," Dewar explained. The full data on the EG&G radiation measurements remains classified. (4576-83)

So what happened to NERVA in the end? When Barnes worked on NERVA in 1968, the project was well advanced. But space travel was on the wane. By 1970, the public's infatuation with getting a man to Mars had made an abrupt about-face. Funding dried up, and NASA projects began shutting down. "We did develop the rocket," Barnes says. "We do have the technology to send man to Mars this way. But environmentally, we could never use a nuclear-powered rocket on Earth in case it blew up on takeoff. So the NERVA was put to bed." (4603-7)

For as many nuclear accidents of its own making as the Atomic Energy Commission could foresee, they could not have predicted what happened on January 24, 1978, when a nuclear-powered Russian spy satellite crashed on North American soil, in Canada. (4654-56)

After several long months, 90 percent of the debris from Cosmos 954 had been recovered. In the postaccident analysis, officials at NORAD determined that if the satellite had made one last orbit before crashing, its trajectory would have put it down somewhere on America's East Coast. (4691-93)

CHAPTER NINETEEN

The Lunar-Landing Conspiracy and Other Legends of Area 51

Two hundred and fifty thousand miles from the Nevada Test Site, on July 20, 1969, with less than ninety-four seconds of fuel remaining, Neil Armstrong and copilot Buzz Aldrin were facing almost certain death as they approached the Sea of Tranquillity on the moon. The autotargeting on their lunar landing module, famously called the Eagle, was taking them down onto a football-field-size crater laden with jagged boulders. To have crash-landed there would have meant death. The autotargeting was burning precious fuel with each passing second; the quick-thinking Neil Armstrong turned it off, took manual control of the Eagle, and, as he would tell NASA officials at Mission Control in Houston, Texas, only moments later, began "flying manually over the rock field to find a reasonably good area" to land. When Armstrong finally set the Eagle down safely on the moon, there was a mere twenty seconds' worth of fuel left in the descent tanks. (4694-4701)

When a nuclear bomb is placed in a deep vertical shaft, as hundreds were at the test site (not to be confused with tunnel tests), the explosion vaporizes the surrounding earth and liquefies the rock. Once that molten rock cools, it solidifies at the bottom of the cavity, and the earth above it collapses, creating the crater. The glass-coated rock, giant boulders, and loose rubble that remain resemble the craters found on the moon. (4727-30)

There had been one successful Great Moon Hoax already, over 130 years earlier, in 1835. Beginning on August 25 of that year, the New York Sun published a series of six articles claiming falsely that life and civilization had been discovered on the moon. According to the newspaper story, winged humans, beavers the size of people, and unicorns were seen through a powerful telescope belonging to Sir John Herschel, the most famous astronomer at the time. Editions of the newspapers sold out, were reprinted, and sold out again. Circulation soared, and the New York Sun made tremendous profits over the story, which readers believed to be true. On the subject of the public's gullibility, Edgar Allan Poe, who also wrote for the paper, said, "The story's impact reflects on the period's infatuation with progress." (4772-78)

Beginning in 1957, massive tunnel complexes were drilled into the volcanic rock and granite by hard-rock miners working twenty-four hours a day, seven days a week. To complete a single tunnel took, on average, twelve months. Most tunnels ran approximately 1,300 feet below the surface of the earth, but some reached a mile underground. Inside these giant cavities, which averaged one hundred feet wide, the Atomic Energy Commission and the Department of Defense have exploded at least sixty-seven nuclear bombs. There, the military has tested nuclear blast and radiation effects on everything from missile nose cones to military satellites. A series called the Pile driver experiments studied survivability of hardened underground bunkers in a nuclear attack. The Hardtack tests sought to learn how "to destroy enemy targets [such as] missile silos and command centers" using megaton bombs. Inside the T-

tunnels, scientists created vacuum chambers to simulate outer space, expanding on those dangerous late-1950s upper atmospheric tests code-named Teak and Orange. And the Department of Defense even tested how a stockpile of nuclear weapons inside an underground bunker would hold up to a nuclear blast. (4838-47)

from 1963 until the last test in 1992, approximately eight hundred tests were conducted underground. (4869)

It is no coincidence that the agency behind some of the most secret and dangerous acts out in the desert—at the Nevada Test and Training Range, the Nevada Test Site, and Area 51—has changed its name four times. First it was called the Manhattan Project, during World War II. Then, in 1947, it changed its name to the Atomic Energy Commission, or AEC. In 1975 the agency was renamed the Energy Research and Development Administration, or ERDA. In 1977 it was renamed again, this time the Department of Energy, “the government department whose mission is to advance technology and promote related innovation in the United States,” which conveniently makes it sound more like Apple Corporation than the federal agency that produced seventy thousand nuclear bombs. Finally, in 2000, the nuclear weapons side of the agency got a new name for the fourth time: the National Nuclear Security Administration, or NNSA, a department nestled away inside the Department of Energy, or DOE. In August 2010, even the Nevada Test Site changed its name. It is now called the Nevada National Security Site, or NNSS. (4884-91)

During the Cold War, the Soviet Union did not have the monopoly on deception. In 1995, after President Clinton ordered his Advisory Committee on Human Radiation Experiments to look into Cold War secret-keeping at the Atomic Energy Commission, disturbing documentation was found. In a memorandum dated May 1, 1995, the subject line chosen by Clinton’s committee to sum up early AEC secret-keeping protocol read: “Official Classification Policy to Cover Up Embarrassment.” One of the more damaging documents unearthed by Clinton’s staff was a September 1947 memo by the Atomic Energy Commission’s general manager John Derry. In a document Clinton’s staff called the Derry Memo the Atomic Energy Commission ruled: “All documents and correspondence relating to matters of policy and procedures, the given knowledge of which might compromise or cause embarrassment to the Atomic Energy Commission and/or its contractors,” should be classified secret or confidential. Clinton’s staff also discovered a document that read: “... there are a large number of papers which do not violate security, but do cause considerable concern to the Atomic Energy Commission Insurance Branch.” In other words, the commission classified many documents because it did not want to get sued. A particular problem arose, the memo continued, “in the declassification of medical papers on human administration experiments done to date.” To find a way around the problem the commission consulted with its “Atomic Energy Commission Insurance Branch.” The conclusion was that if anything was going to be declassified it should first be “reworded or deleted” so as not to result in a legal claim. (4904-16)

CHAPTER TWENTY

From Camera Bays to Weapons Bays, the Air Force Takes Control

In October of 1979, construction for an F-117 Nighthawk support facility at Tonopah began inside Area 52. The facility at Area 51 served as a model for the facility being built at Area 52. Similarly styled runways and taxiways were built, as well as a maintenance hangar, using crews already cleared for work on Nevada Test Site contracts. Sixteen mobile homes were carted in, and several permanent support buildings were constructed. Sandia didn't want to draw attention to the project, so the Air Force officers assigned to the base were ordered to grow their hair long and to grow beards. Sporting a hippie look, as opposed to a military look, was less likely to draw unwanted attention to a highly classified project cropping up in the outer reaches of the Nevada Test Site. (5078-83)

Project Aquiline was not the CIA's first attempt to gather intelligence using cover from the animal kingdom. Project Ornithopter involved a birdlike drone designed to blend in with nature by flapping its wings. And a third, even smaller drone was designed to look like a crow and land on windowsills in order to photograph what was going on inside CIA targeted rooms. The tiniest drone program, orchestrated in the early 1970s, was Project Insectothopter, an insect-size aerial vehicle that looked like a dragonfly in flight. Insectothopter had an emerald green minifuselage and, like Ornithopter, flapped its wings, which were powered by a miniature engine that ran on a tiny amount of gas. Through its Office of Research and Development, or ORD, the CIA had also tried turning live birds and cats into spies. In one such program, CIA-trained pigeons flew around Washington, DC, with bird-size cameras strapped to their necks. The project failed after the extra weight tired out the pigeons and they hobbled back to headquarters on foot instead of in flight. Another CIA endeavor, Acoustic Kitty, involved putting electronic listening devices in house cats. But that project also backfired after too many cats strayed from their missions in search of food. One acoustic kitty got run over by a car. The Agency's pilotless-vehicle projects were forever growing in ambition and in size. One robotic drone from the early 1970s, a project financed with DARPA, was disguised to look like an elephant—ready to do battle in the jungles of Vietnam. (5144-55)

CHAPTER TWENTY-ONE

Revelation

The first reconnaissance drone mission in the war on terror was flown over Kabul, Afghanistan, just one week after 9/11, on September 18, 2001. Three weeks later, the first Hellfire-equipped Predator drone was flown over Kandahar. (5214-15)

“Over eighty percent of the satellite communications used in U.S. Central Command's area of responsibility is provided by commercial vendors,” reads the Pentagon's “Surprise in Space” report. And when, in 2007, the Chinese—unannounced and unexpectedly—shot down one of their own satellites with one of their own weapons, the incident opened the Pentagon's eyes to a whole host of potential wicked-problem scenarios in space. (5329-32)

In the 1950s, the United States and the Soviet Union actually considered using space as a launching pad for war. President Eisenhower's science adviser James Killian—a man with so much power that he was not required to tell the truth to Congress—fielded regular suggestions from the Pentagon to develop, in his own words, “satellite bombers, military bases on the moon, and so on.” Killian was the man who

spearheaded the first nuclear weapon explosions in space, first in the upper atmosphere (Orange), then near the ozone layer (Teak), and finally in outer space (Argus). (5349-53)

In the 1980s, the military worked to develop the bunker buster, a nuclear weapon designed to fire deep into Earth's surface, hit underground targets, and detonate belowground. Weapons designer Sandia was brought on board. It was called the W61 Earth Penetrator, and testing took place at Area 52 in 1988. The idea was to launch the earth-penetrator weapon from forty thousand feet above but after many tests (minus the nuclear warhead), it became clear that a nuclear bomb would have little or no impact on granite, which is the rock of choice in which to build sensitive sites underground. After President Clinton ended all U.S. nuclear testing in 1993 (the Comprehensive Nuclear-Test-Ban Treaty was adopted by the United Nations General Assembly in 1996 and signed by five of the then seven or eight nuclear-capable countries), the idea of developing an earth-penetrating nuclear weapon lost its steam. But the building of underground facilities by foreign governments continued to plague war planners, so along came a nonnuclear space-based weapons project called Rods from God. That weapons project involved slender metal rods, thirty feet long and one foot in diameter, that could be launched from a satellite in space and hit a precise target on Earth at ten thousand miles per second. T. D. Barnes says "that's enough force to take out Iran's nuclear facility, or anything like it, in one or two strikes." The Federation of American Scientists reported that a number of similar "long-rod penetration" programs are believed to currently exist. After the Gulf War, DARPA hired a secretive group called the JASON scholars (a favored target in conspiracy-theorist circles) and its parent company, MITRE Corporation, to report on the status of underground facilities, which in government nomenclature are referred to as UGFs. The unclassified version of the April 1999 report begins, "Underground facilities are being used to conceal and protect critical activities that pose a threat to the United States." These threats, said JASON, "include the development and storage of weapons of mass destruction, principally nuclear, chemical, and biological weapons," and also that "the proliferation of such facilities is a legacy of the Gulf War." What this means is that the F-117 stealth bomber showed foreign governments "that almost any above ground facility is vulnerable to attack and destruction by precision guided weapons." For DARPA, this meant it was time to develop a new nuclear bunker buster—Comprehensive Nuclear-Test-Ban-Treaty or not. (5391-5410)

In 2002, with America again at war, the administration of George W. Bush revived the development of the nuclear bunker-buster weapon, now calling it the Robust Nuclear Earth Penetrator. In April of the same year, the Department of Defense entered into discussions with the Lawrence Livermore National Laboratory to begin preliminary design work on the new nuclear weapon. By fiscal year 2003, the Stockpile Services Robust Nuclear Earth Penetrator line item received \$14.5 million; in 2004 another \$7.5 million; and in 2005 yet another \$27.5 million. In 2006, the Senate dropped the line item. Either the program was canceled or it got a new name and entered into the black world—perhaps at Area 51 and Area 52. (5418-23)

The gypsies have a saying: You're not really dead until the last person who knows you dies. (5456-57)

In July of 1947, Army intelligence spearheaded the efforts to retrieve the remains of the flying disc that crashed at Roswell. And as with other stories that have become the legends of Area 51, part of the conspiracy theory about Roswell has its origins in truth. The crash did reveal a disc, not a weather

balloon, as has subsequently been alleged by the Air Force. And responders from the Roswell Army Air Field found not only a crashed craft, but also two crash sites, and they found bodies alongside the crashed craft. These were not aliens. Nor were they consenting airmen. They were human guinea pigs. Unusually petite for pilots, they appeared to be children. Each was under five feet tall. Physically, the bodies of the aviators revealed anatomical conundrums. They were grotesquely deformed, but each in the same manner as the others. They had unusually large heads and abnormally shaped oversized eyes. One fact was clear: these children, if that's what they were, were not healthy humans. A second fact was shocking. Two of the child-size aviators were comatose but still alive. (5463-70)

When Joseph Stalin sent the biologically and/or surgically reengineered children in the craft over New Mexico hoping it would land there, the engineers were told, Stalin's plan was for the children to climb out and be mistaken for visitors from Mars. Panic would ensue, just like it did after the radio broadcast of The War of the Worlds. America's early warning radar system would be overwhelmed with sightings of other "UFOs." Truman would see how easily a totalitarian dictator could control the masses using black propaganda. Stalin may have been behind the United States in atomic bomb technology, but when it came to manipulating the people's perception, Stalin was the leader with the upper hand. (5523-28)

One day, I asked again. "Why didn't President Truman reveal the truth in 1947?" This time he answered. "Because we were doing the same thing," he said. "They wanted to push science. They wanted to see how far they could go." Then he said, "We did things I wish I had not done." Then, "We performed medical experiments on handicapped children and prisoners." "But you are not a doctor," I said. "They wanted engineers." "On whose authority did you act?" "The Atomic Energy Commission was in charge. And Vannevar Bush," he said. "People were killed. In this great United States." "Why did we do that?" "You do what you do because you love your country, and you are told what you are doing is for the good of the country," the engineer said. Meaning out at the original Area 51, starting in 1951, the EG&G engineers worked in secret on a nefarious Nazi-inspired black project that would remain entirely hidden from the public because Vannevar Bush told them it was the correct thing to do. "It was a long, long time ago," the engineer said. "I have tried to forget." "When did it end?" I asked. No answer. "In 1952?" I asked. Still no answer. "In 1953...1954...?" "At least through the 1980s it was still going on," he said. (5533-42)

According to my source, the Atomic Energy Commission conducted experiments on humans in a classified government facility in the Nevada desert beginning in 1951. Although this was done in direct violation of the Nuremberg Code of 1947, it is far from the first time the Commission had acted in violation of the most basic moral principle involving voluntary human consent. (5557-60)

EPILOGUE

"Hitler invented stealth," says Gene Poteat, the first CIA officer in the Agency's history to be assigned to the National Reconnaissance Office, or NRO. Gene Poteat's job was to assess Soviet radar threats, and to do this, he observed many spy plane tests at Area 51. "Hitler's stealth bomber was called the Horten Ho 229," Poteat says, "which is also called the Horten flying wing. It was covered with radar-absorbing

paint, carbon embedded in glue. The high graphic content produced a result called 'ghosting,' which made it difficult for radar to see." (5597-5601)

As discovered by President Clinton's advisory committee on human experiments, this so-called medical research involved using as guinea pigs individuals living at the Dixon Institution for the Retarded, in Illinois, and at the New Jersey State Colony for the Feeble Minded. The doctors were testing vaccines for malaria, influenza, and sexually transmitted diseases. Some programs continued until 1973. (5383-85)

Almost a century ago, in 1922, Vannevar Bush cofounded a company that contracted first with the military and later with the Atomic Energy Commission. He called his company Raytheon because it meant "light from the gods." Raytheon has always maintained a considerable presence at the Nevada Test Site, the Nevada Test and Training Range, and Area 51. Currently, it is the fifth-biggest defense contractor in the world. It is the world's largest producer of guided missiles and the leader in developing radar technology for America's early-warning defense system. This is the same system that, in the 1950s, CIA director General Walter Bedell Smith feared the Soviets might overrun with a UFO hoax, leaving the nation vulnerable to an air attack. (5692-97)