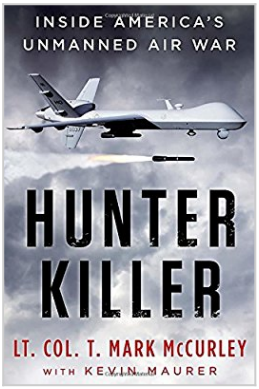

Hunter Killer: Inside America's Unmanned Air War

By T. Mark Mccurley, Kevin Maurer

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In *Hunter Killer*, Air Force Lt. Col. T. Mark McCurley provides an unprecedented look at the aviators and aircraft that forever changed modern warfare. This is the first account by an RPA pilot, told from his unique-in-history vantage point supporting and executing Tier One counterterrorism missions. Only a handful of people know what it's like to hunt terrorists from the sky, watching through the electronic eye of aircraft that can stay aloft for a day at a time, waiting to deploy their cutting-edge technology to neutralize threats to America's national security.

Hunter Killer is the counterpoint to the stories from the battlefront told in books like *No Easy Day* and *American Sniper*: While special operators such as SEALs and Delta Force have received a lot of attention in recent years, no book has ever told the story of the unmanned air war. Until now.

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Review
Praise for *Hunter Killer*

“A veteran’s gritty, engrossing account of America’s RPA service in today’s far-flung conflicts.”-*Library Journal* (starred review)

“An Air Force veteran tells an exciting tale of tracking terrorist leaders by remote piloted aircraft, the future of military aviation… An illuminating tale of a pilot on the cutting edge.” *–Kirkus*

About the Author
LT . COL. T. MARK McCURLEY is a retired Air Force pilot and former intelligence operator. In 2003, he volunteered for the secretive Predator program, deploying five times to Iraq,Afghanistan, and other locations, where he has flown the MQ-1 Predator and the MQ-9 Reaper, accruing more than one thousand combat hours in flight.

KEVIN MAURER is an award-winning journalist and the bestselling coauthor, with Mark Owen, of *No Easy Day: The Firsthand Account of the Mission That Killed Osama bin Laden*. He has covered special operations forces for a decade.

AUTHOR’S NOTE

I am an operator.

I am not a door kicker. I do not fast rope, rappel, or jump out of airplanes. Never have I been called upon to assault any position, be it fixed or fluid, though I have been trained to do so. I do not claim to be like the SEALs or Special Forces. That wasn’t my career path.

But I am still an operator. A fighter.

In 2003, more than a decade into my Air Force career, I faced a third consecutive assignment to a noncombat unit. I volunteered for the only combat job available to me at the time—the RQ-1 Predator. Dog, my squadron commander, looked sidelong at me when I made my request. A crusty, old-school fighter pilot, he shared the same belief as the rest of the Air Force, and even myself.

Predators were for chumps.

“Mark, are you sure you want this?” he asked.

Dog deeply cared about his people and would cheerfully work any assignment for me if I truly desired it.

“This won’t be good for your career.”

Careerism had never been my goal. I had long ago elected to deviate from the normal, expected path and bounce from aircraft to aircraft with each assignment. The Air Force expected officers to stick with one aircraft their whole careers. Each community told me the same thing. A change would be bad for my promotion opportunities.

“Sir,” I said. “I just want to get into the fight. Do my part.”

I had felt that way since September 11. I had been leading a T-6A formation sortie over Valdosta, Georgia, when the Federal Aviation Administration directed us to land. The controller was both curt and professional, but it was unusual since military often were exempted from such directives.

After we’d landed, our engines had barely spun to a stop before the excited crew chief ran up to us, asking if we had heard the news. Someone had flown an airplane into the World Trade Center. At first, we had reacted skeptically. After all, inexperienced pilots flew their little aircraft perilously close to the towers all the time. Sightseers did stupid things like that.

But, when I’d gotten to the 3rd Flying Training Squadron duty desk, I joined two dozen instructor pilots and students huddled around the screen watching clips of an airliner barreling into the first tower.

The video repeated and repeated. And then it changed. It was subtle at first, then nightmarishly clear. The “LIVE” icon flashed as the airliner plunged again into the tower. Another aircraft thundered into the second tower. We all knew one hit was an accident. Two was intentional.

We were in a war unlike any other fought by the United States. And I wanted to do my part.

Dog sighed.

“All right, I’ll work this for you.”

“Thank you, sir.”

Hunter Killer is the story of an extraordinary group of young men and women with whom I had the honor to serve from 2003 through 2012. It is also the story of the Predator and its evolution from an aviation backwater joke to the tip of the spear in the war against terrorism.

In this book, I use only tactical call signs (nicknames) or first names to protect the identities of the pilots and crew. Certain senior leaders whose identities are already in the public domain are mentioned by name. Radio call signs for aircraft, units, or persons have been documented as accurately as my memory can manage. Some tactical call signs have been modified to ensure security of those entities still in harm’s way.

I’ve taken great pains not to include details of any ongoing missions. I have also endeavored to protect specific tactics and procedures currently used by our crews as they continue to fight.

Hunter Killer is written from my point of view. This is a ground-level perspective of life in the remotely piloted aircraft community. I have strived to accurately portray events as they occurred, but the fog of war may have clouded how I perceived actions or remembered details. Any errors in the text are mine. Additionally, any opinions articulated here are also my own and do not represent the views of the United States Air Force, Department of Defense, or United States government. This story was written to honor the small cadre of aviators, the operators, who fought and continue to fight a war deep in the shadows.

Hunter Killer is their story.

PROLOGUE

Retribution

The phone rang in the squadron operations center and I snatched it after the first ring.

It was my private line direct to the Joint Task Force based at Camp Lemonnier in Djibouti. We'd been tracking a high-profile target and I had a feeling this was the call we'd been waiting for, for weeks.

"Squirrel here," I said.

On the line was the Predator liaison officer, or LNO. He worked for the Joint Operations Center (JOC) commander. His job was to coordinate Predator missions in the region. My squadron provided the Predators to keep watch and strike suspected terrorists and pirates.

"Launch," the liaison officer said.

"How many?"

"All three," he said.

Three Predators equipped with two AGM-114 Hellfire missiles each waited on the ramp. The planes were in alert status, ready to take off at a moment's notice. The phone line wasn't secure enough to confirm it, but I knew one thing as I hung up the phone.

Today, the wolf pack hunted.

It was September 30, 2011. I was the commander of the 60th Expeditionary Reconnaissance Squadron at Camp Lemonnier, which was built by the French Foreign Legion in Djibouti. The country was a former French colony with oppressively hot weather and few assets save its location northwest of Somalia and across the Gulf of Aden from Yemen. It was prime strategic real estate for American counterterror operations.

Camp Lemonnier shares the single runway at Djibouti-Ambouli International Airport, on the outskirts of Djibouti City and close to the only major seaport servicing East Africa. Following the September 11 attacks, the United States leased it from the Djiboutian government for thirty-eight million dollars a year in order to establish a conduit for its humanitarian operations in the interior. The Marines were the first Americans at the base in 2002 and quickly established a small base capable of airlift operations. The mission of the Combined Joint Task Force–Horn of Africa quickly grew to include intelligence-gathering operations throughout East Africa. A few years later, the JOC stood up to address the growing terrorism threat in the region and across the Gulf of Aden in the Arabian Peninsula.

I hung up the phone and gave the order to launch. My director of operations called the maintainers on the ramp and passed the word. The single props on the backs of the Predators started to hum as the pilots in the ground control station—a shipping container with cockpits containing everything needed to control the aircraft—started preflight checks. My pilots slowly maneuvered the Predators off the ramp and onto the runway. Three crews eight thousand miles away in the United States scrambled to their cockpits, sitting at consoles in air-conditioned quarters at Cannon Air Force Base in New Mexico waiting to take control of the birds. My pilots in Djibouti would perform the takeoff and turn over control of the Predators to pilots in the United States to fly the mission. As a ten-year veteran of the Predator program, I'd been on that end of these missions countless times before. No other aircraft in the Air Force used two crews—one to take off and the other to fly the mission. It wasn't the only way our program was unique.

I went outside to watch the launch. The thermometer near the building hovered at ninety-five degrees as the three aircraft started to spin up. Heat was a worse enemy to the Predators than al Qaeda. The “heat window” was upon us. If it got any hotter, the delicate electronics within the Predators could overheat and melt before reaching the cooler temperatures at higher altitudes.

Back in the operations center, I could hear over the radio as the Djiboutian air traffic control tower cleared the Predators to take off. I watched from a concrete barrier as the Predators lumbered down the runway, barely able to lift off if not for the slight incline at the end of the tarmac. Once airborne, the Predators flew out to sea before turning for Yemen.

I checked my watch. We had several hours before the Predators would be across the Gulf of Aden and be on target. I returned to my other duties, but I made a mental note to head over to the Task Force in a couple of hours to watch the feed.

It was still hot as I walked into the Task Force’s facility. The thermometer at the door now read a balmy 120 degrees. There were no comforting sea breezes in the summer, only a constant fifteen- to twenty-knot wind coming from the desert that felt more like a hair dryer. A wall-mounted air conditioner whirred as I walked inside the metal prefab building. The small unit strained to keep up with the stifling temperatures outside.

Six fifty-inch plasma screens lined the walls around the JOC commander’s podium. Each showed the video feed from various Predators or Reapers flying around the region.

Some were in Africa.

Most were in Yemen.

The pilots and sensor operators flying the aircraft were based in numerous locations around the globe, digitally connected to our aircraft as if they were right down the hall.

The room buzzed with anticipation as I walked inside. The JOC commander was a short officer, standing on a central dais at the center of the room. From his position, he could see all six monitors. The Predator LNO stood at his desk a few paces to the right of the commander.

“That him?” I asked the Predator LNO, a tall Air Force major.

“Not sure,” the LNO said. “We confirmed he was active about five hours ago.”

The LNO didn’t look away from the monitors showing the Predators’ video feeds.

“We are still looking to get eyes on him right now.”

Not having “eyes on” meant we couldn’t see the target. The guys never said where the leads came from.

The target was Anwar al-Awlaki.

Born in New Mexico to Yemeni parents, al-Awlaki, thirty-eight years old, had been in contact with two September 11 hijackers and was in contact with Major Nidal Malik Hasan via email before Hasan killed thirteen people in a shooting at Fort Hood in Texas in 2009. Al-Awlaki also inspired Nigerian student Umar Farouk Abdulmutallab to attempt to use an underwear bomb to blow up a Detroit-bound airliner on Christmas Day in 2009.

After being investigated by the FBI for his connections to al Qaeda, al-Awlaki fled to London and then to Yemen, where he worked as editor in chief of al Qaeda’s English-language recruitment magazine, *Inspire.*

The magazine featured an article on how to make bombs. The Boston Marathon bombers would eventually use the article to carry out their attack.

On the monitor, I saw the town of Khashef, a small village north of Sana'a, Yemen's capital. The village looked like a mix of mud-brick and cinder-block houses haphazardly thrown together. It was nondescript enough to serve as a hideout and close enough to the big city that conveniences were a short drive away.

"The target's active," said an analyst sitting nearby. "We are seeing indications he's on the move."

Two white Toyota HiLux trucks pulled up outside a house in the village. Both trucks had king cabs that sat about five people. The black-and-white Predator feed on the plasma screen locked onto the lead truck.

The officer gave al-Awlaki's coordinates and I checked the feeds. The two trucks sat very near the coordinates. My Predators were close enough to consider themselves on target. We all watched closely as eight men spilled out of a nearby house and quickly climbed into the trucks. They wore garb traditional to the area, white robes and head scarves. One wore all white and climbed into the lead truck. The doors barely shut before the driver of the lead truck took off, trailing a plume of dust and exhaust. The trail vehicle followed a moment later.

"Stay on them," the JOC commander said.

I watched the LNO type the command on his keyboard, sending the order through a secure Internet chat to the Predator crews in Nevada. Seconds later, the Predator's sensor operator smoothly shifted its cross hairs onto the lead truck, setting the camera underneath the aircraft's nose to track the truck. The crew was efficient, good. I knew a skilled team was important today.

"Sir," the Army officer said. "Awlaki just announced he was moving."

"Agreed, sir," another officer said. "Call came from the lead vehicle."

The JOC commander nodded.

"I want all eyes on."

Within seconds, the other two Predator feeds shifted to the two vehicles picking their way through the village's market. Vendors and shoppers clogged the road in the late morning, making final purchases before the noon heat made shopping unbearable. The crowd slowed the trucks as the drivers darted through breaks in the sea of people.

"Gordon is lead," the JOC commander said.

Gordon was the lead Predator's call sign. The aircraft was named after the Army Delta Force operator who was killed in Somalia defending a downed UH-60 Black Hawk crew in 1993. It was the only Predator call sign not based on an Air Force legend.

The goal was to hit al-Awlaki while in transit between the villages of Khashef and Marib. An isolated strike meant no witnesses and low collateral damage. It also kept civilians out of harm's way. Al-Awlaki simply wouldn't show up at the meeting.

"LNO, running ROE now," the JOC commander said. "Have the crews spin up their missiles."

The ROE, or rules of engagement, are a set of criteria that must be met to legally take a shot in combat. No Predator crew could strike until the ROE were satisfied. I knew we had to be careful and make sure the target

was in fact al-Awlaki. We were not drones, but professional pilots and planners who scrutinized every target to make sure the shot was legal and just.

We couldn't shoot until he cleared the village. A Hellfire missile would obliterate his truck, but also send deadly shrapnel into the surrounding buildings. A miss in the village would be catastrophic.

This would be the biggest operation since the mission that had taken Osama bin Laden nearly five months prior. We were going after Washington's new number one target. This would be a high-profile strike, a signature mission that would likely cement Predator and the remotely piloted aircraft (RPA) community as one of the United States' premier counterterrorism weapons.

When I started flying Predators in 2003, we mostly watched and listened. We were looked at as second-class citizens next to the fighter squadrons. But over the decadelong war, we'd become hunters. Predators and Reapers were responsible for a significant number of air strikes in Afghanistan, Pakistan, and Yemen. By 2013, policy makers no longer needed to risk boots on the ground in exhaustive and costly expeditions. Predators and Reapers could slip silently across lines on the map to track and, if necessary, kill terrorists. The RPA gave US officials a long arm to directly attack US enemies abroad.

The LNO put on a headset so he could talk to the Predator pilots. Now the Internet chat would be used to document coordinates and clearances. With his headset in place, the LNO flicked a switch so all three Predators could hear his commands.

"Gordon," the LNO said. "You've got the lead, acknowledge."

A remarkably clear voice, tinged with only a hint of static, responded.

"Copy, Gordon's got lead," the pilot said. "Checklist complete in two mikes."

"Mikes" was radio lingo for minutes.

The convoy made it through the market and picked up the pace as they neared the edge of the town. We had only one shot at him. If we missed, al-Awlaki would go to ground. At best, it would be months before we found him—if we found him again.

The driver took his time in the village, knowing the civilians protected him and his passengers. But once he hit the open road, speed was his only security. After years of flying similar missions, I knew a shot in the open could be difficult. No one followed traffic laws, and cars raced down the region's highways at near reckless speed. Al-Awlaki's driver, I was sure, would be no different.

The convoy wound its way past the outskirts of town and onto the highway, driving a curvy track through smaller villages and open desert.

"Target's clear. Any word?" Gordon said.

The pilot's voice showed no emotion, no stress. The LNO looked at the JOC commander. He just shook his head.

"Negative, Gordon," the LNO said. "Still awaiting word."

"Awaiting word" was a euphemism for someone who couldn't, or wouldn't, make a decision. This one was no light decision. We were preparing to shoot an American terrorist in a foreign country. Only the president could authorize a strike of this magnitude.

“Copy,” Gordon said.

“Try to maintain position so we can get a shot off quickly,” the LNO said.

Gordon didn’t respond. He didn’t have time as he worked to keep his aircraft in prime shooting range while anticipating any sudden turns by the target. Besides, the pilot didn’t want to get into the classic “don’t tell a pilot how to fly his airplane” argument. A few seconds later, Bong, another Predator flying nearby, scanned the landscape ahead of the convoy.

“Plain’s leveling out,” Bong said. “Looks like we’re about to hit the straightaway.”

“Copy,” Gordon said.

The straightaway was the most logical place for the shot. The vehicles would maintain a constant speed on a predictable course. There were few ridgelines to block the missile or the targeting laser.

As expected, al-Awlaki’s convoy hit the plain and immediately accelerated. Twin rooster tails of dust kicked up behind them as they raced through sand deposited on the road by recent wind- and sandstorms.

“Ten minutes.”

Gordon’s comment was more a query than a statement. We had ten minutes until al-Awlaki reached Marib. If the Predator was going to shoot, it needed to do so on this road. The JOC commander, headset pinned to his ear, shook his head in the negative. Each time the convoy passed a mile marker, it reduced the chances of a strike.

I watched the monitor as Gordon maneuvered into position. Flying faster than the trucks, the pilot executed S-turns to keep from passing the convoy. If al-Awlaki knew we were above him, he wasn’t acting like it. The trucks sped straight down the highway.

“Gordon, say status,” the LNO said.

“Checklist complete, awaiting clearance,” Gordon said.

“Copy,” the LNO said. “Bong, get into position for an immediate follow-up attack.”

If Gordon missed, he would be unable to fire his second missile. He would be so close at impact that a second shot would be impossible for the missile to negotiate. Bong would be lurking at a good distance to follow up or hit the second vehicle if the first strike was successful.

“Five minutes and the window closes,” Gordon said. “Say status.”

I watched as the JOC commander hung up his phone.

“It’s time,” he said. “Pass the 9-Line.”

The LNO pushed “Enter” on his keyboard. He’d already typed the 9-Line, which spelled out the order to shoot in scripted lines. Each line passed specific information to the pilot. The Task Force’s joint terminal attack controller (JTAC), an Air Force airman trained to call in air strikes, came online. He had been watching the feed in the operations center. JTACs were usually on the ground, but that was impossible in Yemen. We had no troops on the ground there. Instead, the JTAC monitored missions from his desk at the operations center, coming in only before a strike.

“Gordon, this is Badger Four One,” the JTAC said. “9-Line is in chat. Call in with direction.”

The video feed remained fixed on the two trucks. Occasionally, the picture would tilt and rotate as the camera adjusted to the Predator's maneuvers. Gordon didn't respond. The pilot was briefing his sensor operator, the second man in his crew, on the shot. The sensor operator was an enlisted airman who controlled the Predator's sensor pod near the aircraft's nose and fired the targeting laser. He was a second set of eyes, especially when preparing to launch a missile. Everyone in the operations cell started to get nervous because the brief was going long.

Uncomfortably long.

Why hadn't they done this already? I shifted my weight from foot to foot trying to burn off some of my nervous energy. The LNO shifted in his seat too, mirroring my discomfort. No one in the operations cell wanted to miss this chance. No one was sure when we'd get another opportunity. I checked the clock hanging over the monitors. Three minutes remained. The video tilted once more.

"Gordon's in from the south," the pilot said. "One minute."

The JTAC didn't hesitate.

"Gordon, you're cleared hot."

CHAPTER 1

Welcome to Predator

"Welcome to the Predator."

Chuck, a longtime instructor at the 11th Reconnaissance Squadron, stood in front of a Predator, giving us the welcome speech. It was my first day of Predator training at Creech Air Force Base in Nevada.

My class of twenty-nine new pilots and sensor operators crowded near the front of the aircraft as Chuck spoke. Up front, the newly enlisted sensor operators watched Chuck's every move as he pointed out the targeting pod, which hung below the chin of the Predator, and the different antennas used to control the aircraft.

I was standing near the back with the other pilots. At the time I entered the program in December 2003, there were few, if any, volunteers. Most Predator pilots had been forced out of other programs because they had damaged the Air Force's manned aircraft or failed to meet the technical or professional standards laid out for each aircraft. Some were there due to injuries that kept them out of manned cockpits.

Few were there because they wanted to be. I was one of only four volunteers.

Ever since I was a kid, I dreamt about being a combat pilot. Growing up in Mississippi, I was the second of two children. Independent by nature, I was fascinated with how machines were constructed. I had an Erector set that I used to design my own spacecraft. I imagined traveling to unexplored worlds, fighting in great space battles, or just discovering some lost civilization.

But it wasn't until my father took me to an air show at Hawkins Field, in Jackson, Mississippi, when I was five that I discovered my true passion. The Confederate Air Force, now known as the Commemorative Air Force, was reenacting a World War II air battle.

The ground vibrated with the rumble of the piston engines as German Messerschmitt and American Mustang fighters danced in a mad circle in the sky. Pyrotechnics erupted around the airfield, simulating bomb strikes

and antiaircraft fire. The noise was tremendous, exhilarating, and wonderful.

But nothing compared to when my father bought me a ticket to climb aboard the B-29 bomber *Fifi*.

I scrambled up the crew ladder, with my dad's careful hand guiding me, and clambered into the copilot's seat. A massive dashboard spread out in front of me with an impossible number of dials and gauges. I cranked on the yoke and imagined what it would have been like to fly the plane.

I was hooked.

I worked hard in high school to earn a spot at the US Air Force Academy because of its guaranteed pilot training program. But after I graduated in the class of 1992, my flight training was delayed because of the post–Cold War drawdown. Instead, I went to intelligence training at Goodfellow Air Force Base in San Angelo, Texas, where I became an intelligence officer.

Three years after I was commissioned, a "no-notice" slot in pilot training at Columbus Air Force Base in Mississippi opened. A fellow USAFA classmate had dropped out of training a week before it started due to family reasons, leaving an open billet the Air Force had to fill. The Air Force Personnel Center pulled my name off a list of alternates and served me "no-notice" to pick up everything and move to Mississippi. I accepted the spot without any reservations. Over the next eight years, I flew trainers and the E-3 Airborne Warning and Control System, which had a massive radar dish on its back. The plane provided command and control to fighters. I flew counterdrug operations off the coast of South America, I patrolled the skies off North Korea as the country's surface-to-air missiles tracked my every move, and I flew presidential escort in East Asia.

I was a good pilot, but my Air Force career had been derailed by my stint as an intelligence officer. My chances of becoming a fighter pilot were slim to none. After a few years as an instructor, it was time to return to the AWACS. I balked. I wanted to stay in the Air Force, but I didn't want to fly the AWACS again. I knew there was no chance it would deploy and I wanted to do my part. The planes had been sent home from the war and were not expected to return. They had become another noncombat assignment.

It was 2003 and the war in Afghanistan was already two years old. The war in Iraq was just beginning. When a slot opened in the Predator training pipeline, I asked for it. After some wrangling, I got it. It wasn't a fighter, but I wanted it because the Predator gave me a chance to stay in the cockpit and contribute to the war effort.

But looking at the Predator in the hangar, I still had my reservations.

I was thirty-three years old, and as Chuck spoke I pondered the prudence of my decision. Like every pilot in the Air Force, I still felt aviation was accomplished in an aircraft, not at a computer terminal on the ground. Trained professionals sitting in the cockpit flew airplanes. Pilots didn't fly from a box. No pilot has ever picked up a girl in a bar by bragging that he flew a remote-controlled plane.

One of my favorite T-shirts had a definition for "pilot" printed across the chest. It sort of summed up the pilot mind-set, albeit in a humorous way.

Pi-lot: n. The highest form of life on earth

To me, the shirt didn't portray arrogance as much as confidence. Flying was special. Few people got to experience the world from thirty thousand feet with a flying machine strapped to their backs and under their own control. From the cockpit, we could see the curve of the earth and watch the cars on the highway reduced to the size of ants. Every time I climbed into the sky, I felt the same exhilaration. Aviation wasn't a job. It was my passion. It was my calling. It was something I had to do to feel complete.

Most men identify themselves through their work, and I had the best job on the planet.

But flying high above the earth has its dangers too. That is when the confidence, often mistaken for arrogance, comes to the surface.

We trusted our skills, because when you're that high above the ground, no one can come up and save you. Unlike cars, aircraft weren't vehicles you could just pull over when they broke down. But that factor was taken out of the equation in the Predator. Unless the aircraft landed on top of the cockpit on the ground, its pilots were safe no matter what happened. I looked down on the Predator because of that fact. Flying it took away all the exhilaration of being airborne and all the adventure of being a pilot.

The first training lesson was Chuck's welcome speech. He delivered it with the cadence of a speaker who had given the same speech one time too many. He wasn't bored, but his tone lacked enthusiasm. His words came out flat and practiced. His insights into the aircraft came from experience, not theory.

Chuck had commanded the 11th when it deployed to Afghanistan to support the invasion. He'd seen the Predator in combat and knew what it could do. As he walked around the aircraft, he carried himself with the military bearing of an officer, even if he was dressed in only khaki pants and a golf shirt.

"This is a system unlike any you've seen," he said.

I had to agree.

It also looked like no airplane I'd ever seen. The pictures didn't do it justice. Until the Predator came along in 1994, typical unmanned aerial vehicles were not much larger than a remote-controlled hobby airplane. In my mind's eye, I figured the Predator would be about the same size.

Built by General Atomics, the MQ-1 Predator was about the size and weight of a Cessna 172 and looked like an angry gray bird with its inverted V-shaped tail resting lightly on the ground. It crouched as if yearning to launch into the sky.

Chuck invited us to come closer. The group of students crowded in. Up close, it was easy to see how the aircraft lacked durability. The thin composite body felt like dry paper. Its anemic landing gear was just springs that flexed with the weight of the aircraft. A converted 115-horsepower four-cylinder snowmobile engine, retrofitted with a turbocharger, powered the slender white prop at the back. The aircraft could reach altitudes of up to twenty-five thousand feet and fly for more than twenty hours without refueling. The Predator was impressive in its simplicity.

Chuck finished with the specs on the aircraft and moved on to the history. The Predator was created in response to the US Air Force's call for an unmanned surveillance plane in 1993. General Atomics, based out of San Diego, originally presented its idea to the Air Force.

Neal and Linden Blue, oil magnates who own a lot of property in Telluride, acquired General Atomics in 1986 for nearly fifty million dollars. While living in Nicaragua, Neal had watched the country's ruling family, the Somozas, be deposed by the Soviet-backed Sandinista coalition. Unable to fight, he wondered what it would take to fly an unmanned airplane using GPS into the huge petroleum, oil, and lubricants (POL) tanks fueling the Soviet-backed army. He wanted to cripple the new regime. The acquisition of General Atomics offered the means for Neal to achieve part of his wish.

In 1992, he hired retired admiral Thomas J. Cassidy to organize General Atomics Aeronautical Systems Inc. Cassidy's mission was to research and produce unmanned aircraft. The company's first attempt was the Gnat. It was built with off-the-shelf parts and sported a camera turret similar to those found on traffic helicopters. It could stay aloft for nearly forty hours, but it was too small to carry weapons and its range was

limited because the controller had to keep the Gnat in sight to control it.

Then came the Predator.

Using what their researchers had learned from the Gnat, the company designed the aircraft with an inverted tail and a massive video sensor ball under the nose. The Predator first flew in 1994 and was introduced to the Air Force shortly after. The pilots running the Air Force met it with skepticism, but Air Force intelligence saw its value.

The Predator could fly over targets and send back high-resolution imagery even on bad weather days. As an added bonus, the aircraft were cheap, at 3.2 million dollars per plane. Four airframes with a ground control station cost about forty million dollars to buy and operate. By comparison, each new F-22 Raptor cost more than two hundred million dollars to purchase.

The first Predator flight was in July 1994. By the time the war in Afghanistan started, the Air Force had sixty Predators, some of which had flown over Bosnia. In February 2001, the Predator fired its first Hellfire missiles and its role as a reconnaissance aircraft started to change. A year later, Predators destroyed Taliban leader Mullah Omar's truck. They also killed an Afghan scrap-metal dealer who looked like Osama bin Laden. In March 2002, a Predator fired a Hellfire missile in support of Rangers fighting on Roberts Ridge during Operation Anaconda. It was the first time a Predator provided close air support to troops on the ground.

The aircraft was valuable on paper, but it wasn't yet considered a key cog in combat operations or even aviation for that matter. The Air Force knew it needed it to fly intelligence missions, but the potential importance of the program hadn't reached the leadership. Flying a Predator was the last stop on most career paths, evident by the austere conditions of the training base. Guys didn't move on to other units to brag about their Predator experience. They left the service as soon as they could. I didn't know it at the time, but when I volunteered in 2003, that was all about to change.

—

Creech Air Force Base sat across US Route 95 from the little desert town of Indian Springs. Area 51 and the nuclear test range sat along the northern edge of the base. Indian Springs was the antithesis of Las Vegas in every way. The sleepy town consisted of mostly trailers, two gas stations, and a small casino that earned more in the restaurant than on the gaming floor. I drove by the local school and noticed an old Navy fighter parked out front. It was painted to resemble the Thunderbirds, the Air Force's demonstration team. Its shattered canopy played host to nesting birds.

The base wasn't much better. US Route 95 ran parallel to the old single runway, limiting the base's ability to expand. To the northwest was Frenchman Lake, where the military tested nuclear weapons in the 1950s. When I drove through the gate the first time, I entered a time warp. A few World War II–era barracks buildings existed at the base. They were made of wood, whitewashed in an effort to make them look new. As I passed them, I saw they had been converted into a chow hall, theater, and medical facility. The only new building was on the east end of the base, where the 11th made its home. For the next four months, I'd spend my days learning to fly the Predator in that building.

By 2003, the Air Force was acquiring two new aircraft a month. It now had to find pilots to fly the expanding fleet of Predators. There were nine other pilots in my class. We stayed in the back of the group as Chuck talked, somewhat aloof. It was an unconscious defense against something we didn't understand: RPA flight. Everything about the Predator was foreign. We were still trying to determine if the aircraft passed the smell test.

Never before had a Predator formal training unit class had so many pilot volunteers. The guys with me saw

the little Predator differently. To them, it wasn't a dead-end assignment; it was an opportunity.

Another pilot, Mike, stood next to me. I recognized Mike from our school days at the Air Force Academy, but I had never really known him personally. Our careers hadn't crossed paths since graduation. He'd flown KC-135 aerial refueling tankers and F-16 fighters, while I flew trainers and the AWACS.

Mike was a couple of inches taller than me. He had a runner's build, and unlike my graying hair, his remained as black as when he'd entered the service. His eyes burned with an intensity I've seen in few officers. We caught up briefly before Chuck started.

"You volunteer?" Mike asked.

Volunteering was an important thing to us. One of the guys in the class had been assigned to Creech after being sent home early from a deployment. He'd knocked up an airman. The four of us who volunteered wanted it known that we chose this life. It was not foisted upon us.

"Yeah, I wanted to avoid a third straight noncombat assignment," I said. "You?"

Mike shook his head.

"I saw the writing on the wall," he said. "Late rated and late to fighters meant it was unlikely I could see a command." His career in aviation had been delayed, much like mine had been.

"Tough," I said.

"It is what it is," he said.

I nodded understanding.

From the back of the class, I looked at the young faces of the nineteen sensor operators who would train with us. These fresh-faced eighteen-year-olds would make up the second half of the crew. The pilot controlled the aircraft and fired the weapons. The sensor operator ran the targeting systems, cameras, and laser designators. Together, we had to form a tight, efficient crew.

As we walked back to the classroom, I took stock of the class. Raw recruits, washouts from other career fields, problem children, and passed-over fighter pilots yearning to prove they deserved a shot were building the Predator community. We all had chips on our shoulders. We all wanted to prove we belonged in the skies over the battlefield. It was the pilots who never forgot who would excel.

CHAPTER 2

Learning to Fly

All the pilots knew how to fly, but we learned quickly that that didn't matter in the Predator. It was a couple of weeks into the program and I was just settling into the "box," or cockpit, for my first flight.

The box was a modified Sea-Land container technically called a ground control station (GCS). The tan container had a vault-like door at one end that opened into a narrow walkway that led to the "cockpit" at the other end. The floor and walls were covered in rough gray carpet and the lights were dim to eliminate glare on the monitors.

Along one side of the walkway was a series of computer racks and two support stations. At the end of the

container were two tan chairs in front of the main control station. A small table jutted out between the pilot station on the left and the sensor operator station on the right. A standard computer keyboard sat on the table in front of each station, bracketed by a throttle and control stick. Below the table was a set of rudder pedals. Both the pilot and sensor operator stations had a throttle on the left and a stick on the right, but only the pilot's controls flew the aircraft. The sensor operator's "throttle" and "stick" controlled the targeting pod.

I shivered as I looked over my shoulder at Glenn, my instructor.

"It's cold in here," I said. "Is it always like this?"

"Mostly," he said. "You'll get used to it."

The HVAC system pumped freezing air into the numerous electronics racks to keep them from overheating. Temperatures could soar to more than one hundred degrees within five minutes if both HVACs failed. The performance of the Predators degraded under anything but optimal temperatures, so the ambient temperature for the crews ended up in the low fifties. The environment was ideal for the massive computers behind me, not the pilots controlling the Predators flying miles away. Crews often wore flight jackets even during the hot Las Vegas summers.

"Run your checks," he ordered calmly.

I rubbed my hands together for warmth and reached for the controls. I checked the instruments to ensure the aircraft was performing well. We controlled the aircraft through two data links that sent commands to the planes and received video feeds and telemetry in return.

Launch and landing, or recovery in Air Force–speak, used a line-of-sight transmitter mounted on a fifty-foot tower outside the GCS. It broadcast commands to the two football-shaped antennas near the front of the Predator. The line-of-sight link worked only if the aircraft could see the transmitter. Since few bases existed close to the fighting, mostly we flew using the beyond-line-of-sight system. That system used satellites in geosynchronous orbit that beamed the command signal to the Predators, connecting to a crew anywhere in the world.

When I first received word of my assignment, I envisioned stepping into a small office to sit at a computer and monitor the progress of the aircraft. I had no idea how similar things would be to a standard cockpit. I finished scanning the data readouts that replaced the more traditional dials and switches of a traditional cockpit.

"You ready?" Glenn said over the roar of two massive HVAC systems.

I nodded.

"Okay," Glenn said. "Let's practice some maneuvers."

Glenn sat on a rolling desk chair behind us as I flew the training mission. He'd flown in Vietnam, earning his credibility, in my opinion. He was like most pilots of the Vietnam era: bold, bright, cocky. He held us to the highest standards. He didn't allow us to cut corners. Glenn didn't care that the RPA community was still new and didn't have the same traditions as the fighter community. He expected us to live up to the same standards he'd achieved.

I grabbed the stick and throttle assembly and set my feet on the rudder pedals under the desk.

"Just like pilot training," Glenn said. "Check your airspace and let's make a turn back to the center."

He meant turn to the center of the small block of air to the southeast of Creech Air Force Base where we were assigned to train. The endless brown of the Nevada desert slipped sideways underneath the Predator. From the pilot seat, I could see the tracker display at the top of the rack with its Google Maps–like view of the world. We could mark targets, define restricted areas, and even watch a small pink airplane icon trace our flight path.

Under the tracker sat the heads-up display, or HUD. The pilot side had an artificial horizon, airspeed, altitude, flight path indicators, and engine instruments. The sensor operator HUD didn't have any of the flight instruments. Instead, it displayed a set of cross hairs to mark center of the picture and readouts to describe the targeting pod's position and target data. The camera, or "ball," on the nose of the aircraft provided both the pilot and the sensor operator with the only view of the aircraft's surroundings.

I pushed the stick to the side. On the tracker, a little pink carrot showed up on a compass dial and spun in the same direction as I pushed the stick. I stopped it on a heading to the southeast by releasing the stick. Then I pressed the "Trim" button at the top of the stick to command the aircraft to fly to that heading.

"Okay," Glenn said. "You'll notice that this takes a couple seconds."

There was a slight delay between the commands given through the flight controls and the aircraft's reaction. The distance between the aircraft and the GCS determined this delay. In line-of-sight mode, the response was near instantaneous. On satellite control, it could take up to three seconds. It doesn't seem like much, but when you're trying to fly a precise path or line up a target, waiting three seconds for your command to reach the aircraft can be maddening.

I counted silently.

One potato, two potato . . .

Flying the Predator was harder than flying a traditional aircraft. I wanted to feel the aircraft in flight, but there was no sound to indicate the speed or engine performance. No feeling of the wings that could indicate an impending stall or malfunction. All I had was spring-loaded feedback in the stick and rudder and a throttle that moved a little too loosely. I had none of the traditional senses beyond sight, and the ball was rarely pointed in the right direction to be useful. For most missions aircraft were trained on the ground, so flying was done using instruments. I had to abandon three thousand hours of experience in handling aircraft with traditional controls and relearn how to fly the Predator.

"Okay, what's next?" I said.

Glenn checked his flight data card.

"Last thing we got before heading back to the pattern is Ku."

Ku, pronounced *kay-you*, was the satellite frequency band that was used to control the aircraft. "Ku" rolled off the tongue a little easier than "satellite." It was essential to make sure we got the link correct and knew how to reestablish control if the link was lost.

"Bring up the Ku menu," Glenn said.

At the top of the tracker display was a menu bar. I ran the mouse to the right tab, clicked it, and opened a dialog box. It asked me for the frequencies, polarization, and a few other bits of information to set up the link.

"Find the frequencies," Glenn said.

I scanned the data card and typed in the right numbers and clicked “Send.”

The screen devolved to static. Confused, I looked back at Glenn.

He shook his head.

“Nice job. You just jammed CNN.”

“Wait, what?” I looked up at the dialog box and down at the data card. The frequencies were right.

“Check your polarization,” Glenn said. “The dialog defaults to horizontal. Our assigned frequency is in the vertical.”

I felt stupid as I corrected my error. Immediately, the picture came back. The aircraft had entered a tight circle in the center of the area. The tracker display confirmed that the aircraft had executed its emergency mission. The Predator is programmed to fly home if the command link is broken.

“Well,” Glenn said in his best deadpan, “I guess we don’t need to bother with the lost-link demo now.” There was a syllabus requirement to show how the aircraft flew home if it lost the communications connection with the cockpit.

After my first flight, I met the guys from my carpool and headed home. Most mornings, we met at a parking lot on the outskirts of Las Vegas and carpooled the forty-five miles from the city to Creech. The rides to and from the base were a good time to catch up on gossip and grouse about the training.

I arrived at the parking lot a few weeks into the training and started complaining about the program before we even got into the car. I had just completed a tour as an instructor, so I was overly critical of the program. I also harbored some pilot arrogance since we all still considered the Predator an abnormality. I forget what I said exactly, but one of my classmates, Oaf, called me out.

“Okay, time-out,” Oaf said. “I’ve had enough. You’re now Grumpy.”

“No, I’m not,” I said.

The moment I fought back, Oaf called me “Grumpy” at every opportunity. There was no way I was going to let them give me “Grumpy” as a call sign. Squirrel was my tactical call sign. I’d gotten it on the first day of pilot training. Coming from my intelligence background, I couldn’t tell the class anything about my old job. So I tried to play it up by saying my job was classified. The whole deal was immature and poorly executed. The class leader decided then and there I should be known as “Secret Squirrel.” Once we started flying, the class started calling me “Flying Squirrel.” Later, it was truncated to just “Squirrel.” Now, that call sign remains my identity. After all, how many guys end up with the name Squirrel?

But I’d complained enough about Creech that my new classmates wanted to rename me.

Etiquette surrounding call signs is one of those unwritten rules of combat aviation. Many military units give call signs that are tied to an embarrassing story. There were a lot of guys in the community with call signs like “Crash,” “Skid,” “Divot,” and anything else that suggested they’d damaged an aircraft, or themselves. No one gets a call sign like “Maverick” or “Iceman” unless it is done in jest. Most pilots get a few call signs over a career as they transition to other aircraft or squadrons. There’s a way out if you don’t like your new call sign, though. It’s tradition that you can buy back your old name with liquor, and no one can take a call sign from you if you used it in combat.

Lucky for me, I’d been “Squirrel” in combat, so I was safe. But Oaf was really making a bigger point with

the new call sign: Stop being a dick. We were all battling our years of flying experience to learn how to pilot the Predator. A lot of the pilots were there under protest. Much of the talk on the trip to and from Creech was about plans to return to our previous aircraft. Even volunteers like me had no plans to make a career in the Predator community.

—

After the first few weeks, I was near the top of the class. Mike and I were competing for the coveted "distinguished graduate" honor. Several of the pilots in class busted a ride, which was Air Force lingo for failing a training flight. Only Mike and I hadn't and maybe a couple of others. We both knew one mistake was all it would take to wind up second. I didn't plan on failing.

The sixth training flight is the most dreaded sortie in the qualification phase. By that time, pilots are far enough into their training that they often feel comfortable enough with the aircraft to fly it on their own. However, our skills were still underdeveloped. Ride six was historically the most failed sortie of the program.

The GCS was its usual arctic cold, but by now I was used to it. I had one hand on the stick and the other on the throttle as I dropped into the pattern around the airfield to land. Landing the aircraft was the single most challenging aspect of learning to fly. Every pilot got humbled at some point on an approach.

"Tower," I said. "Deadly One One, point Whiskey at sixty-five hundred feet."

The control tower came back immediately.

"Deadly One One, enter downwind for runway two seven, altimeter two nine nine seven."

I typed in the barometric pressure. The altimeter jumped a few hundred feet, showing we were closer to the ground than I'd thought. Sweat beaded on my brow. The drops ran down my back between my shoulder blades despite the chilling temperature inside the GCS. I could feel Glenn's eyes on my instruments as he watched my every move.

A misstep now could easily result in a crash.

The HUD showed a wildly bucking aircraft. Winds flowed down from the surrounding Spring Mountains range, creating unpredictable eddies and currents at low altitude. The turbulence tossed the two-thousand-pound Predator around. The aircraft's long wings were perfect for high-altitude flying, not landing. Even the slightest terrain change at low altitudes could result in wild lift changes. If you weren't careful, the airplane could soar or crash without a moment's notice.

I flicked off the autopilot. My stick and throttle now acted like those in any manned aircraft. Push stick forward, cows get big. Pull stick back, cows get small. Push stick to the side, world tilts. Almost immediately, the aircraft bucked. I tried to maintain altitude, but the air currents tossed the Predator like a rag doll.

"Don't fight the drafts," Glenn advised. "You'll just end up making it worse."

"Like a PIO?"—a pilot-induced oscillation.

"Yes," he said.

In heavy turbulence, pilots often set the throttle and a known pitch angle where they can maintain altitude. The airplane bucked up and down but generally stayed somewhere close to the desired altitude.

“Good,” he said. “Start off with a standard overhead.”

“Copy,” I said. “Before landing check.”

The sensor operator, an experienced instructor, came to life. During this first phase, we had little interaction with the sensor operators except when landing. He read off the checklist items.

“Gear down,” he intoned.

I checked the gear. It was already down, having served as my main form of drag to help the aircraft descend. Three little icons glowed green in the HUD, indicating the gear was safely down.

“Down and three green,” I said.

We didn’t trust that indicator, though.

“Clear to move the ball?” the sensor operator said.

On the early flights, the sensor operators rarely touched the ball while the pilots learned to fly. One of the few times they did move it was to check the gear. We always considered a visual check more reliable than the green indicators. The ball swung about, pointed straight down at the nose wheel.

“Nose wheel steering, sir.”

I kicked the rudder pedals, and the wheel in the image moved left, then right.

“Brief,” the sensor operator said.

As pilot, it was my job to talk the crew through the landing plan.

Users Review

From reader reviews:

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