# THE HUNT FOR ZERO POINT

*Inside the Classified World of Antigravity Technology*

NICK COOK

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In memory of Julian Cook, inventor, and Harry Hawker, fighter pilot

*Per ardua ad astra*

And for my children, Lucy and William, that one day they or their children may see the stars more closely

# Author's Note and Acknowledgments

Not everyone who has assisted me in *The Hunt For Zero Point* has wished to be identified.

There are four people—"Amelia Lopez," "Lawrence Cross," "Daniella Abelman" and "Dr. Da Marckus"—whose identities I have deliberately blurred. They, of course, know who they are and gratefully acknowledge their help.

It goes without saying that I could not have interpreted the mass of raw science data in this boo without the exceptional skills of Dan Marckus. His knowledge, wisdom, humor and friendship hav been an inspiration to me.

Everyone else is exactly as identified in the text.

The people and institutions I can thank freely are listed below:

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impossible without them.

# Prologue

The dust devils swirled around my Chevrolet Blazer, catching the early evening light. I watch Sheriff's Deputy Amelia Lopez clamber out of her Chrysler Le Baron and stare for a moment in t direction the plane had gone down ten years ago.

I grabbed my rucksack. By the time I looked up again she was already striding toward the peak.

Over a rusted barbed-wire fence and we were into the scrub—with new traces of green at its ti from the spring rains. Beyond lay the edge of the Sequoia National Forest, a huge expanse of protect park and woodland.

We left the broken fence posts behind and our cars were lost against the sunset. I looked for oth traces of a human presence, but found none, even though we were only twelve miles from Bakersfiel California, a city of four hundred thousand people on the edge of the Sierra Nevadas.

Amelia Lopez' peaked cap and the firearm on her gunbelt were clearly silhouetted as she mov along the jagged edge of the ridgeline.

As I sucked down the warm thin air and wiped the sweat out of my eyes, I tried to picture her as s must have been on that sweltering July night ten years earlier; the night she'd been out partying wi her college friends at a campsite near the Kern River.

It was in the breaking hours of July 11, 1986. Just as she was settling into her sleeping bag the j went supersonic somewhere in the black sky overhead.

The pressure wave of the sonic boom hit the campsite like a clap of thunder, sending a shower embers from the campfire into the night sky.

Amelia was too startled to say a thing; then, the entire horizon was flash-lit by an enormo explosion, the flames shooting skyward as the plane plowed into Saturday Peak ten miles away.

She told me it had sparked a dozen brushfires on the edge of the forest; that it took more than hundred Forest Service and local firefighters to put it out. Her only thought was that this wasn't aircraft at all, but a hydrogen bomb.

Within hours, every newspaper in the state, and a whole lot more besides, had a reporter heading f these foothills with a brief to find out what had hit the ground. Amelia Lopez, a law student at t state university in Sacramento, had been one of several witnesses quoted in the papers that h covered the story, which was how I'd traced her.

She and her friends hadn't gone more than five miles toward the impact point when one of the noticed a figure on the trail up ahead. The scrub either side of her erupted with movement and the ne

thing she knew her face was in the dirt and she had a boot in her back and a gun at her head.

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Out of the corner of her eye she saw that they were soldiers—not California National Guard, might have been expected in an environmental emergency, but SWAT-types brandishing assault rifles night-vision systems and a shit-load of threats about government property and national security.

Two of her friends started on about their rights under the Constitution, that this was public land ar there wasn't a person on earth who could tell them to get off it. But to Lopez their protests registere as white noise on the edge of a persistent and piercing alarm. These soldiers were unlike any she ever seen.

She screamed for her friends to shut up, but once the screaming began, she couldn't stop it. Sh screamed and she yelled and she flailed against the pressure in her back, until the next thing she fe was the slap from her roommate that brought her around. When she finally understood what she wa being told, it was that the soldiers were gone.

None of them said a word as they doubled back to the campsite. When they reached it, still num with shock, they found a bunch of reporters onsite getting statements from other witnesses. Somebod shoved a tape recorder in her face and started asking questions and before she knew it she'd given h name and stammered something about an atomic blast.

As for the rest, she and her friends said nothing.

Amelia Lopez kept a lid on her feelings for the next two and half years, until November 1988, in fac when the outgoing Reagan administration revealed the existence of the F-117A Stealth Fighter, a aircraft that had been flying in secret squadron service out of a classified air base in Nevada for ov five years. In that time, she learned, it had crashed twice: and on one of those occasions—on the nig of July 10–11, 1986, to be precise—she'd had the grave misfortune to be there.

The troops had been part of a Pentagon "red team" flown in by helicopter to secure the crash site all costs.

When she got my message, she'd been reluctant to meet up at first, but when I finally persuaded h to talk, she found it difficult to stop.

We reached the crash site soon after the sun dipped below the edge of the mountain. The summ was only 2,000 feet above us, but here the ground was even and covered in a crusty layer of dirt. Th plants and trees were younger than the vegetation we'd passed on the way up. But that was the on real clue something had happened here.

Amelia Lopez sat on a rock and slowly removed her mirror shades before pouring bottle springwater over her face. I felt her eyes follow me as I moved between clumps of vegetation, kickin over rocks and sifting the sand, even though there was nothing to see.

Lopez bent down and ran her fingers through the soil. "I read they sieved the dirt for a thousan yards out from the impact point," she said. "Those guys were damned thorough. A few weeks aft they left it was like *nothing* ever happened here." She paused a moment before adding: "You being a

expert, I imagine you knew that."

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It was framed as a question and I grappled for something to say, conscious that she'd brought m here for any insight I could provide into the events of that night.

I said nothing, so she turned to me and said: "Are you gonna tell me what is really going on here?"

Overhead, an eagle cried. As I watched it wheel on the updrafts I hoped that she wouldn't press m for an answer, because I didn't know what to tell her.

Standing here in this place, I was filled with the old feeling. It was almost impossible to articulat but it left you with a taste in the mouth, some innate sense, that however far you dug, however mar people you interviewed or questioned, you were simply scratching the surface of the sprawling U. defense-industrial base. What had happened here, the events that had imprinted themselves onto th landscape in a moment or two of madness a decade or so earlier, were almost tangible, even thoug there was no physical evidence—no fragments amidst the thin soil and the rocks—to suggest anythin out of the ordinary had occurred.

These people were thorough; Lopez herself had said it. But they left something behind, somethin you couldn't see or touch—and it was that trace, that echo of past deeds, that had brought me here.

The Stealth Fighter was real enough. As a reporter, I'd covered it from the inside out. Yet as a piec of technology it was more than two decades old, almost every detail of it in the open now. But stri away the facts and the feeling persisted.

I got it when I went to U.S. government defense laboratories and on empty windblown hangar floo in parched, little-known corners of the country. I got it at press conferences in power-soaked corrido of the Pentagon. But most of all I got it when I stared into the eyes of the people who worked on tho programs.

What I got back was a look. Individually, it said nothing, but collectively it told me there was secret out there and that it was so big no one person held all the pieces. I knew, too, that whatever was, the secret had a dark heart, because I could sense the fear that held it in place.

It was impossible to tell Lopez any of this, of course, because it was simply a feeling. But as headed back for the car, I knew the trip hadn't been a waste.

At long last, the secret had an outline.

Through half-closed eyes, I could almost reach out and touch it.

# Chapter 1

From the heavy-handed style of the prose and the faint handwritten “1956” scrawled in pencil alon the top of the first page, the photocopied pages had obviously come from some long-forgotten schlo popular science journal.

I had stepped away from my desk only for a few moments and somehow in the interim the artic had appeared. The headline ran: “The G-Engines Are Coming!”

I glanced around the office, wondering who had put it there and if this was someone’s idea of joke. The copier had cut off the top of the first page and the title of the publication with it, but it w the drawing above the headline that was the giveaway. It depicted an aircraft, if you could call it tha hovering a few feet above a dry lakebed, a ladder extending from the fuselage and a crewmemb making his way down the steps dressed in a U.S.-style flight suit and flying helmet—standard garb f that era. The aircraft had no wings and no visible means of propulsion.

I gave the office another quick scan. The magazine’s operations were set on the first floor. Th whole building was open-plan. To my left, the business editor was head-down over a proof-pag checking copy. To her right was the naval editor, a guy who was good for a windup, but who wa currently deep into a phone conversation and looked like he had been for hours.

I was reminded of a technology piece I’d penned a couple of years earlier about the search f scientific breakthroughs in U.S. aerospace and defense research. In a journal not noted for i exploration of the fringes of paranormality, nor for its humor, I’d inserted a tongue-in-cheek referenc to gravity—or rather to antigravity, a subject beloved of science-fiction writers.

“For some U.S. aerospace engineers,” I’d said, “an antigravity propulsion system remains th ultimate quantum leap in aircraft design.” The implication was that antigravity was the aerospac equivalent of the holy grail: something longed for, dreamed about, but beyond reach—and like always to remain so.

Somehow the reference had escaped the sub-editors and, as a result, amongst my peers, oth aerospace and defense writers on the circuit, I’d taken some flak for it. For Jane’s, the publishin empire founded on one man’s obsession with the detailed specifications of ships and aircraft almost century earlier, technology wasn’t something you joked about.

The magazine I wrote—and still write—for, *Jane’s Defence Weekly,* documented the day-to-da dealings of the multibillion-dollar defense business. *JDW,* as we called it, is but one of a portfolio products detailing the ins and outs of the global aerospace and defense industry. If you want to kno about the thrust-to-weight ratio of a Chinese combat aircraft engine or the pulse repetition frequenc of a particular radar system, somewhere in the Jane’s portfolio of products there is a publication th

has the answers. In short, Jane's was, and always has been, about facts. Its motto is: Authoritativ Accurate, Impartial.

It was a huge commercial intelligence-gathering operation; and provided they had the mone anyone could buy into its vast knowledge base.

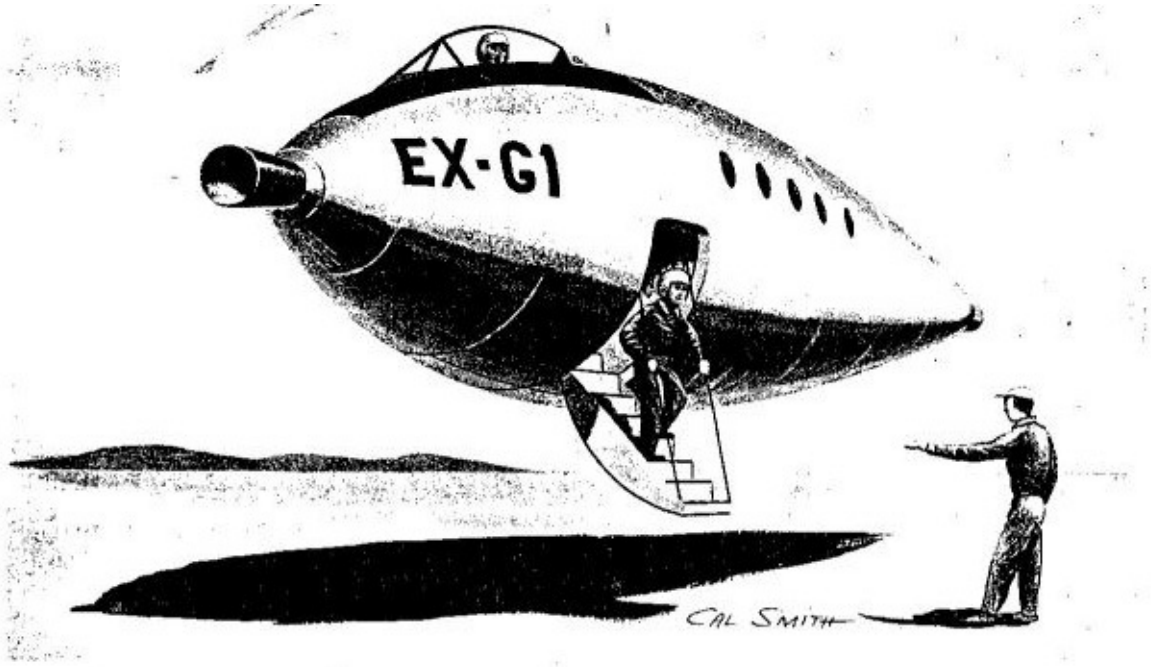
I cast a glance at the bank of sub-editors' work-stations over in the far corner of the office, b nobody appeared remotely interested in what was happening at my desk. If the subs had nothing to with it, and usually they were the first to know about a piece of piss-taking that was going down in t office, I figured whoever had put it there was from one of the dozens of other departments in t building and on a different floor. Perhaps my anonymous benefactor had felt embarrassed abo passing it on to me?

I studied the piece again.

The strapline below the headline proclaimed: "By far the most potent source of energy is gravit Using it as power, future aircraft will attain the speed of light." It was written by one Michael Glady and began: "Nuclear-powered aircraft are yet to be built, but there are research projects already und way that will make the super-planes obsolete before they are test-flown. For in the United States a Canada, research centers, scientists, designers and engineers are perfecting a way to control gravity- a force infinitely more powerful than the mighty atom. The result of their labors will be antigravi engines working without fuel—weightless airliners and space ships able to travel at 170,000 miles p second."

On any other day, that would have been the moment I'd have consigned it for recycling. B something in the following paragraph caught my eye.

The gravity research, it said, had been supported by the Glenn L. Martin Aircraft Company, Be Aircraft, Lear "and several other American aircraft manufacturers who would not spend millions dollars on science fiction." It quoted Lawrence D. Bell, the founder of the plane-maker that was fir to beat the sound barrier. "We're already working on nuclear fuels and equipment to cancel o gravity." George S. Trimble, head of Advanced Programs and "Vice President in charge of the Project at Martin Aircraft," added that the conquest of gravity "could be done in about the time it to to build the first atom bomb."




# The G-Engines Are Coming!

**By far the most potent source of energy is gravity. Using it as power future aircraft will attain the speed of light.**

**By MICHAEL GLADYCH**

■ Nuclear-powered aircraft are yet to be built, but there are research projects already under way that will make the super-planes obsolete before they are test-flown. For in the United States and Canada research centers, scientists, designers and engineers are perfecting a which there has been no escape. "What goes up must come down," they said. The bigger the body the stronger the gravity attraction it has for other objects . . . the larger the distance between the objects, the lesser the gravity pull. Defining those rigid rules was as way to earth.

This discovery gave modern scientists a new hope. We already knew how to make magnets by coiling a wire around an iron core. Electric current running through the coiled wire created a magnetic field and it could be switched on

A little further on, it quoted "William P. Lear, the chairman of Lear Inc., makers of autopilots an other electronic controls." It would be another decade before Bill Lear went on to design and build th first of the sleek business jets that still carry his name. But in 1956, according to Gladych, Lear ha his mind on other things.

"All matter within the ship would be influenced by the ship's gravitation only," Lear apparentl said of the wondrous G-craft. "This way, no matter how fast you accelerated or changed course, you body would not feel it any more than it now feels the tremendous speed and acceleration of the earth The G-ship, Gladych explained, could take off like a cannon shell, come to a stop with equ abruptness and the passengers wouldn't even need seat belts. This ability to accelerate rapidly, th author continued, would make it ideal as a space vehicle capable of acceleration to a spee approaching that of light.

There were some oblique references to Einstein, some highly dubious "facts" about the nature subatomic physics and some speculation about how various kinds of "antigravity engines" mig work.

But the one thing I kept returning to were those quotes. Had Gladych made them up or ha Lawrence Bell, George S. Trimble and William "Bill" Lear really said what he had quoted them saying?

Outside, the rain beat against the double-glazed windows, drowning the sound of the traffic th crawled along the London to Brighton road and the unrelenting hum of the air conditioning th regulated the temperature inside.

The office was located in the last suburb of the Greater London metropolis; next stop the congeste joys of the M25 ring road and the M23 to Gatwick Airport. The building was a vast redbrick two-sto bunker amid between-the-wars gray brickwork and pebbledash. The rain acted like a muslin filte washing out what little ambient color Coulsdon possessed. In the rain, it was easy to imagine th nothing much had changed here for decades.

As aviation editor of *JDW*, my beat was global and it was pretty much unstructured. If I needed cover the latest air-to-surface weapons developments in the U.S.A., I could do it, with relatively fe questions asked. My editor, an old pro, with a history as long as your arm in publishing, gave each us, the so-called "specialists" (the aviation, naval and land systems editors), plenty of rope. His on proviso was that we filed our expenses within two of weeks of travel and that we gave him goo exclusive stories. If I wanted to cover an aerospace and defense exhibition in Moscow, Singapore Dubai, the funds to do so were almost always there.

As for the job itself, it was a mixture of hard-edged reporting and basic provision of informatio We reported on the defense industry, but we were part of it, too—the vast majority of the company revenue coming from the same people we wrote about. Kowtowing was a no-no, but so was kickin down doors. If you knew the rules and played by them you could access almost any part of the glob defense-industrial complex. In the course of a decade, I'd visited secret Russian defense facilities an ultrasensitive U.S. government labs. If you liked technology, a bit of skulduggery and people, it was career made in heaven. At least 60 percent of the time I was on the road. The bit I liked least w office downtime.

Again, I looked around for signs that I was being set up. Then, satisfied that I wasn't, but feelin self-conscious nonetheless, I tucked the Gladych article into a drawer and got on with the business the day. Another aerospace and defense company had fallen prey to post–Cold War economics. It wa 24 hours before the paper closed for press and the news editor was yelling for copy.

Two days later, in a much quieter moment, I visited the Jane's library. It was empty but for th librarian, a nice man way past retirement age who used to listen to the BBC's radio lunchtime new while gazing out over the building's bleak rear lot.

In the days before the Internet revolution, the library was an invaluable resource. Fred T. Jan published his first yearbook, *Jane's Fighting Ships*, in 1898; and in 1909 the second, *Jane's All Th World's Aircraft*, quickly built on the reputation of the former as a reference work *par excellence* f any and all information on aeronautical developments. Nigh on a century later, the library held ju about every book and magazine ever put out by the company and a pile of other reference wor besides.

I scanned the shelves till I found what I was looking for.

The *Jane's All The World's Aircraft* yearbook for 1956 carried no mention of antigravi

experiments, nor did successive volumes, but that came as no great surprise. The yearbooks are th
aerospace equivalent of *Burke's Peerage* or the *Guinness Book of Records*: every word pored ove
analyzed and double-checked for accuracy. They'd have given antigravity a very wide berth.

For a story like this, what I was looking for was a news publication.

I looked along the shelves again. Jane's had gotten into the magazine publishing business relative
recently and the company's copies of *Flight International* and *Aviation Week* ran back only a fe
years. But it did have bound volumes of *Interavia Aerospace Review* from before the Second Worl
War. And it was on page 373 in the May 1956 edition of this well-respected publication, in among
advertisements for Constellation airliners, chunky-looking bits of radar equipment and (curiously f
an aviation journal) huge "portable" Olivetti typewriters, that I found a feature bylined "Inte
Washington, D.C." with the headline: "Without Stress or Strain . . . or Weight." Beneath it ran th
strapline: "The following article is by an American journalist who has long taken a keen interest
questions of theoretical physics and has been recommended to the Editors as having close connectio
with scientific circles in the United States. The subject is one of immediate interest, and *Interav*
would welcome further comment from knowledgeable sources."

The article referred to something called "electro-gravitics" research, whose aim was to "seek th
source of gravity and its control." This research, "Intel" stated, had "reached a stage where profou
implications for the entire human race are beginning to emerge."

I read on, amused by the tone and wondering how on earth the article had come to be accepted in
mainstream aerospace journal.

"In the still short life of the turbojet airplane [by then, 1956, little more than a decade], man has ha
to increase power in the form of brute thrust some twenty times in order to achieve just twice th
speed. The cost in money in reaching this point has been prodigious. The cost in highly specialize
man-hours is even greater. By his present methods man actually fights in direct combat the forces th
resist his efforts. In conquering gravity he would be putting one of his most competent adversaries
work for him. Antigravitics is the method of the picklock rather than the sledgehammer."

Not only that, the article stated, but antigravity could be put to work in other fields beyon
aerospace. "In road cars, trains and boats the headaches of transmission of power from the engine
wheels or propellers would simply cease to exist. Construction of bridges and big buildings would b
greatly simplified by temporary induced weightlessness etc. Other facets of work now under wa
indicate the possibility of close controls over the growth of plant life; new therapeutic technique
permanent fuelless heating units for homes and industrial establishments; new sources of industri
power; new manufacturing techniques; a whole field of new chemistry. The list is endless . . . an
growing."

It was also sheer fantasy.

Yet, for the second time in a week I had found an article—this time certainly in a publication with
solid reputation—that stated that U.S. aerospace companies were engaged in the study of th
"science." It cited the same firms mentioned by Gladych and some new ones as well: Sperry-Rand an

General Electric among them. Within these institutions, we were supposed to believe, people we working on theories that could not only make materials weightless, but could actually give the "negative weight"—a repulsive force that would allow them to loft away "contra-gravitationally." Th article went further. It claimed that in experimentation conducted by a certain "Townsend T. Brown weights of some materials had already been cut by as much as 30 percent by "energizing" them ar that model "disc airfoils" utilizing this technology had been run in a wind tunnel under a charge of hundred and fifty kilovolts "with results so impressive as to be highly classified."

I gazed out over the slate rooftops. For *Interavia* to have written about antigravity, there had to hav been something in it. The trouble was, it was history. My bread-and-butter beat was the aerospac industry of the 1990s, not this distant cozy world of the fifties with its heady whiff of jet-engine spir and the developing Cold War.

I replaced the volume and returned to my desk. It should have been easy to let go, but it wasn't. people of the caliber quoted by Gladych and *Interavia* had started talking about antigravity anytime the past ten years I would have reported it—however skeptical I might be on a personal level. Wh had these people said the things they had with such conviction? One of them, George S. Trimble, ha gone so far as to predict that a breakthrough would occur in around the same time it took to develo the atomic bomb—roughly five years. Yet, it had never happened. And even if the results "Townsend T. Brown's" experiments had been "so impressive as to be highly classified," they ha clearly come to naught; otherwise, by the '60s or '70s the industry would have been overtaken b fuelless propulsion technology.

I rang a public relations contact at Lockheed Martin, the U.S. aerospace and defense giant, to see if could get anything on the individuals Gladych had quoted. I knew that Lawrence Bell and Bill Le were both dead. But what about George S. Trimble? If Trimble was alive—and it was a long sho since he would have to be in his 80s—he would undoubtedly confirm what I felt I knew to be true; th he had been heavily misquoted or that antigravity had been the industry's silly-season story of 1956.

A simple phone call would do the trick.

Daniella "Dani" Abelman was an old media contact within Lockheed Martin's public affai organization. Solid, reliable and likable, she'd grown up in the industry alongside me, only on th other side of the divide. Our relationship with the information managers of the aerospace and defen world was as double-edged as the PR/reporter interface in any other industry. Our job was to get th lowdown on the inside track and, more often than not, it was bad news that sold. But unlike o national newspaper counterparts, trade press hacks have to work within the industry, not outside i This always added an extra twist to our quest for information. The industry comprised hundreds thousands of people, but despite its size, it was surprisingly intimate and incestuous enough f everyone to know everyone else. If you pissed off a PR manager in one company, even if it was on th other side of the globe, you wouldn't last long, because word would quickly get around and the flow information would dry up.

But with Abelman, it was easy. I liked her. We got on. I told her I needed some background on a individual in one of Lockheed Martin's "heritage" companies, a euphemism for a firm it had lon since swallowed whole.

The Glenn L. Martin Company became the Martin Company in 1957. In 1961, it merged with th American-Marietta Company, becoming Martin-Marietta, a huge force in the Cold War U.S. defens electronics industry. In 1994, Martin-Marietta merged again, this time with Lockheed to for Lockheed Martin. The first of the global mega-merged defense behemoths, it built everything fro stealth fighters and their guided weapons to space launchers and satellites.

Abelman was naturally suspicious when I told her I needed to trace an ex-company employee, b relaxed when I said that the person I was interested in had been doing his thing more than 40 years ag and was quite likely dead by now.

I was circumspect about the reasons for the approach, knowing full well if I told her the real stor she'd think I'd taken leave of my senses.

But I had a bona fide reason for calling her—and one that legitimately, if at a stretch, involv Trimble: I was preparing a piece on the emergence of the U.S. aerospace industry's "special projects facilities in the aftermath of the Cold War.

Most large aerospace and defense companies had a special projects unit; a clandestine adjunct their main business lines where classified activities could take place. The shining example was th Lockheed Martin "Skunk Works," a near-legendary aircraft-manufacturing facility on the edge of th California high desert.

For 50 years, the Skunk Works had sifted Lockheed for its most highly skilled engineers, puttin them to work on top secret aircraft projects.

Using this approach it had delivered some of the biggest military breakthroughs of the 20th centur among them the world's first Mach 3 spyplane and stealth, the art of making aircraft "invisible" radar and other enemy sensor systems.

But now the Skunk Works was coming out of the shadows and, in the process, giving somethin back to its parent organization. Special projects units were renowned for bringing in complex, hig risk defense programs on time and to cost, a skill that had become highly sought after by the ma body of the company in the austere budget environment of the 1990s.

Trimble, I suggested, might be able to provide me with historical context and "color" in a otherwise dry business story. "Advanced Programs," the outfit he was supposed to have worked fo sounded a lot like Martin's version of the Skunk Works.

Abelman said she'd see what she could do, but I wasn't to expect any short-order miracles. Sh wasn't the company historian, she said dryly, but she'd make a few inquiries and get back to me.

I was surprised when she phoned me a few hours later. Company records, to her surprise—and mi —said that Trimble was alive and enjoying retirement in Arizona. "Sounds hard as nails, but a amazing guy by all accounts," she breezed. "He's kinda mystified why you want to talk to him aft all this time, but seems okay with it. Like you said, it's historical, right?"

"Right," I said.

I asked Abelman, while she was at it, for all the background she had on the man. History or not, said, trying to keep it light, I liked to be thorough. She was professional enough to sound less tha convinced by my newfound interest in the past, but promised she'd do her best. I thanked her, the hung up, feeling happy that I'd done something about it. A few weeks, a month at the outside, th mystery would be resolved and I could go back to my regular beat, case closed.

Outside, another bank of gray storm clouds was rolling in above rooftops that were still slick fro the last passing shower.

I picked up my coat and headed for the train station, knowing that somewhere between the offi and my flat in central London I was going to get soaked right through.

The initial information came a week later from a search through some old files that I'd buried in collection of boxes in my basement: a company history of Martin Marietta I'd barely remembered I acquired. It told me that in 1955 Trimble had become involved in something called the Researc Institute for Advanced Studies, RIAS, a Martin spin-off organization whose brief was to "observe th phenomena of nature . . . to discover fundamental laws . . . and to evolve new technical concepts f the improvement and welfare of mankind."

Aside from the philanthropic tone, a couple of things struck me as fishy about the RIAS. First of its name was as bland as the carefully chosen "Advanced Development Projects"—the official title the Skunk Works. Second, was the nature and caliber of its recruits. These, according to the compan history, were "world-class contributors in mathematics, physics, biology and materials science."

Soon afterward, I received a package of requested information from Lockheed Martin in the mai RIAS no longer existed, having been subsumed by other parts of the Lockheed Martin empire. B through an old RIAS history, a brochure published in 1980 to celebrate the organization's "first 2 years," I was able to glean a little more about Trimble and the outfit he'd inspired. It described him a "one of the most creative and imaginative people that ever worked for the Company."

I read on.

From a nucleus of people that in 1955 met in a conference room at the Martin Company's Midd River plant in Maryland, RIAS soon developed a need for its own space. In 1957, with a staff of abo 25 people, it moved to Baltimore City. The initial research program, the brochure said, was focused o NASA and the agency's stated goal of putting a man on the moon. But that wasn't until 1961.

One obvious question was, what had RIAS been doing in the interim? Mainly math, by the look it. Its principal academic was described as an expert in "topology and nonlinear differenti equations."

I hadn't the least idea what that meant.

In 1957, the outfit moved again, this time to a large mansion on the edge of Baltimore, a pla chosen for its "campus-like" atmosphere. Offices were quickly carved from bedrooms and worksho from garages.

It reminded me of accounts I'd read of the shirtsleeves atmosphere of the early days of th Manhattan Project when Oppenheimer and his team of atom scientists had crunched through th physics of the bomb.

And that was the very same analogy Trimble had used. The conquest of gravity, he'd said, woul come in the time it took to build the bomb.

I called a few contacts on the science and engineering side of Lockheed Martin, asking them, in roundabout kind of way, whether there was, or ever had been, any part of the corporation involved gravity or "counter-gravitational" research. After some initial questions on their part as to why should be interested, which I just about managed to palm off, the answer that came back was uniform "no." Well, almost. There was a guy, one contact told me, a scientist who worked in th combat aircraft division in Fort Worth who would talk eloquently about the mysteries of Nature an the universe to anyone who would listen. He'd also levitate paper clips on his desk. Great characte but a bit of a maverick.

"Paper clips?" I'd asked. "A maverick scientist levitating paper clips on his desk? At Lockhee Martin? Come *on*."

My source laughed. If he hadn't known better, he'd have said I was working up a story o antigravity.

I made my excuses and signed off. It was crazy, possibly dangerous stuff, but it continued to hav me intrigued.

I called an old friend who'd gained a degree in applied mathematics. Tentatively, I asked whethe topology and nondifferential linear equations had any application to the study of gravity.

Of course, he replied. Topology—the study of shape in physics—and nonlinear equations were th standard methods for calculating gravitational attraction.

I sat back and pieced together what I had. It didn't amount to much, but did it amount to something

In 1957, George S. Trimble, one of the leading aerospace engineers in the U.S. at that time, a ma it could safely be said, with a background in highly advanced concepts and classified activity, had pu together what looked like a special projects team; one with a curious task.

This, just a year after he started talking about the Golden Age of Antigravity that would swee through the industry starting in the 1960s.

So, what went wrong?

In its current literature, the stuff pumped out in press releases all the time, the U.S. Air Force constantly talked up the "vision": where it was going to be in 25 years, how it was going to wage an win future wars and how technology was key.

In 1956, it would have been as curious as I was about the notion of a fuelless propulsion source, or

that could deliver phenomenal performance gains over a jet; perhaps including the ability to accelera rapidly, to pull hairpin turns without crushing the pilot and to achieve speeds that defied t imagination. In short, it would have given them something that resembled a UFO.

I rubbed my eyes. The dim pool of light that had illuminated the Lockheed-supplied material Trimble and RIAS had brought on a nagging pain in the back of my head. The evidence w suggesting that in the mid-'50s there had been some kind of breakthrough in the antigravity field a for a small window in time people had talked about it freely and openly, believing they we witnessing the dawn of a new era, one that would benefit the whole of mankind.

Then, in 1957, everyone had stopped talking about it. Had the military woken up to what w happening, bringing the clamps down?

Those in the know, outfits like Trimble's that had been at the forefront of the breakthrough, wou probably have continued their research, assembling their development teams behind closed doo ready for the day they could build real hardware.

But of course, it never happened.

It never happened because soon after Trimble, Bell and Lear made their statements, sani prevailed. By 1960, it was like the whole episode never took place. Aerospace development continue along its structured, ordered pathway and antigravity became one of those taboo subjects that peop like me never, ever talked about.

Satisified that everything was back in its place and as it should be, I went to bed.

Somewhere in my head I was still tracking the shrill, faraway sounds of the city when the pho rang. I could tell instantly it was Abelman. Separated by an ocean and five time zones, I heard t catch in her breathing.

"It's Trimble," she said. "The guy just got off the phone to me. Remember how he was fine to the interview? Well, something's happened. I don't know who this old man is or what he once was, b he told me in no uncertain terms to get off his case. He doesn't want to speak to me and he doesn want to speak to you, not now, not ever. I don't mind telling you that he sounded scared and I don like to hear old men scared. It makes me scared. I don't know what you were really working on wh you came to me with this, Nick, but let me give you some advice. Stick to what you know about; sti to the damned present. It's better that way for all of us."

# Chapter 2

In 1667, Newton mathematically deduced the nature of gravity, demonstrating that the same force th pulls an apple down to earth also keeps the moon in its orbit and accounts for the revolutions of t planets. But today, we are still thwarted in attempts to measure it with any great precision. In la experiments carried out since the 1930s, G has consistently defied efforts to be measured to more tha a few decimal places.

This was what the reference books told me as I plowed through a stack of standard science works the musty, gothic surroundings of the local library.

It was intensive work. Science was something I'd come to associate with the grind of exams. didn't feel like the beginnings of a journalistic investigation.

I continued to scratch notes. But Newton openly stated that he had no idea what gravity actual was. All he knew was that it had to be caused by something.

The idea that a body may act on another through the vacuum of space over huge distances "witho the mediation of anything else . . . is to me so great an absurdity that I believe no man can ever fa into it. Gravity must be caused . . . but whether this agent be material or immaterial I have left to t consideration of my reader."

I glanced up. The librarian, who'd been waiting to catch my eye, nodded toward the clock on t wall behind her. I looked around and realized I was the only person in the room. I'd lost track; it was Saturday and the library closed early.

Outside, the rain had given way to the starlit sky of a passing cold front. I pulled up my collar a started down the street, dodging puddles that shimmered under the streetlights. The anomaly ov gravity's measurement and the uncertainties over its causes only served to tell me how incomplete m knowledge of physics was.

I reached the edge of the common. The lights of my home street were faintly visible through t trees. I thought about my late-night call from Abelman. In the week since her approach to Trimble a his initial favorable response to the idea of an interview, it very much appeared that somebody ha gotten to him. And then I thought about what I had just learned. If we had no real understanding gravity, how could people say with such certainty that *antigravity* could not exist?

In 1990, the U.S. Air Force had been looking at developing a weapon capable of firing a "plasm bullet"—a doughnut-shaped ring of ionized gas—at 10,000 kilometers per second.

Shiva Star was capable of generating and holding up to 10 megajoules of electrical energy and potential 10 trillion watts—three times as much as the entire U.S. electricity grid carried in a year. A

the time that I visited Shiva, which was located within the USAF's directed energy research laborato at Kirtland Air Force Base in New Mexico, program engineers had been readying to fire a plasm bullet sometime in 1995. The purpose of the bullet was to destroy incoming Russian nuclear warhea and, despite some fierce technological challenges, the program engineers were confident they could d it. But several years later, when I returned to Kirtland, it was like the plasma bullet project nev existed. Engineers had difficulty even recalling it.

Officially, it had been terminated on cost grounds. But this made little sense. The program had bee budgeted at $3.6 million per year for five years. Eighteen million bucks to produce a true quantu leap weapon system. Few people I spoke to bought the official version. Somewhere along the wa they said, Shiva must have delivered. Somewhere along the line, the program had gone black.

I coupled this knowledge with what the antigravity proponents had been saying in 1956. If yo could find a way of shielding objects from the effects of gravity, the military, let alone the economi ramifications would be enormous.

Aircraft propulsion seems to have progressed little in appreciable terms since the advent of the j engine in the 1940s. Incremental improvements for decades have been of the order of a few percentag points. The fastest aircraft in the world—officially, at least—is still the Lockheed Blackbird, designe in the late 1950s, first flown in 1962 and retired in 1990.

Amongst my peers, there had been speculation since the late 1980s about the existence of a secr replacement for the Blackbird, a mythical plane called Aurora that supposedly flew twice as fast an on the edges of space.

I had no direct evidence of Aurora, but then I'd never gone looking for it either. On balance, thoug I felt *something* had been developed.

In 1992, circumstantial evidence of Aurora's existence was strengthened when *Jane's Defenc Weekly* carried a detailed sighting of a massive triangular-shaped aircraft spotted in formation wi USAF F-111 bombers and an air-refueling tanker above an oil rig in the North Sea. The sighting w credible because it was witnessed by a highly trained aircraft recognition expert in the Royal Observ Corps who happened to be on the rig at the time.

Shiva had been my first brush with the "black" world, the Pentagon's hidden reservoir of defen programs—projects so secret that officially they did not exist. Since then, I'd felt the presence other deep black projects, but only indirectly.

Looking for the black world was like looking for evidence of black holes. You couldn't see a blac hole, no matter how powerful your telescope, because its pull sucked in everything around including the light of neighboring stars. But astronomers knew that black holes existed because of th intense friction they generated on their edges. It was this that gave them away.

Forty years ago, the people in charge of the Air Force's hidden budget would have been quick to s the extraordinary implication of Trimble's message; that there would be no limit—no limit at all— the potential of an antigravity aerospace vehicle.

The black world would have thrilled to the notion of a science that did not exist.

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As I crossed from the park back into the glare of the streetlights, I knew I was quite possibly staring at a secret that had been buried more than 40 years deep.

I called Lawrence Cross, an aerospace journalist from the circuit, an ex-Jane's man, now a bureau chief for a rival publication in Australia.

Cross and I had spent long hours ruminating on the existence of U.S. Air Force black programs and the kind of technologies the Air Force might be pursuing in ultrasecrecy.

I liked Cross, because he had his feet squarely on the ground, was a hell of a good reporter, but wasn't your average dyed-in-the-wool-type hack. It had been a while since we had spoken.

The phone rang for ages. It was ten at night my time, eight in the morning his; and it was the weekend. I could hear the sleep in his voice when he finally picked up the handset. In the background a baby was crying. Cross had three kids under six years old. Ninety percent of the time he looked completely exhausted.

He remained quiet as I sketched out the events of the past weeks. I told him about the article, Trimble's initial willingness to be interviewed, then the phone call from Abelman and her insistence on Trimble's say-so, that I drop the whole business.

"This is interesting," he said, stifling a yawn, "but why the long-distance call?"

"I wanted to tap you on one of your case studies."

"Uh-huh." He sounded wary, more alert suddenly. "Which one?"

"Belgium," I said. "Wasn't there some kind of flap there a year or two back?"

"You could say that. Hundreds of people reported seeing triangular-shaped craft all over the country in two 24-hour waves—one in 1989, the other in 1990. The Belgian Air Force even scrambled F-16s to intercept them. Why the sudden interest?"

"You once told me that those craft might have been the result of some kind of secret U.S. development effort."

Cross laughed. "Maybe I did. But I've had time to study the official reports since—the ones put out by the Belgian government. Those craft were totally silent. They hovered, often very close to witnesses, and they never made a sound. You may find my take on this hard to swallow, but there is no technology—no technology on earth—that could produce that kind of performance."

"Didn't the Belgian press try to tag the sightings to Aurora?"

"Yes, but you and I know that that's crazy. Even if Aurora is real, don't tell me it can remain stationary one moment and fly Mach 7 the next. And without making a sound. Belgian radar tracked

these things. The tapes show that they pulled turns of around 20 to 40 g—enough to kill a huma pilot." He paused. "You're not seriously suggesting what I think you're suggesting, are you?"

"A 40-year U.S. development effort, in the black, to make antigravity technology a reality? Wh not? They were talking about it openly in 1956, Lawrence, then it dropped off the scope. Complete and utterly, like somebody orchestrated the disappearance. It makes me want to consider th possibility, at least, that someone achieved a breakthrough and the whole thing went super-classified

"And now you've got the bit between your teeth?"

"Something like that, yes."

For a long moment, Cross fell silent. Then I heard him light a cigarette. In the background, I hea his wife calling him. Then he cupped the receiver, because I caught his voice, muffled, telling her he be there in a minute. The baby was still bawling its lungs out.

"If you break cover on this," he said, "you'll blow everything. For yourself, I mean."

"Come on," I said, "it's a story. It may be an old story, but I'll apply the rules that I would on an other. If there's any truth in it, the answers will pop out. They usually do."

"That's so bloody naive. If there is any truth in it, which I doubt, they'll already know you' interested and that's not going to help you one little bit. They'll stand in your way, like they may hav done already with this old man . . . Trimble? If there isn't any truth in it, then you're just going to loo like a fucking idiot."

"They, Lawrence? Who's they?"

"The security people. The keepers of the secrets. The men-in-black. You know who I mean."

I didn't. To my ears, it sounded more than a little insane.

"I'm going to bide my time," I said, returning to the reason for the call, "do this at my own pac For the moment, there's no need for me to break cover. Right now, all I have to do is conduct som low-level research and keep my eyes and ears open when I'm out there in the field. No one has know about any of this, Lawrence. All I'm asking for in the meantime is a little help. Some of yo knowledge. A few facts."

"Listen," he said, "there are no facts in this field; the whole business, if you want to know, is rive with disinformation, much of it, in my opinion, deliberately orchestrated. Sooner or later, you' going to have to surface and when you do, some of that crazy UFO spin is going to rub off on yo That happens and you'll never eat lunch in this great industry of ours again. Do you understand wh I'm saying?"

And then his tone softened. "I've got to go now, but if you really are hell-bent on taking th forward, you might want to try an outfit in Washington, D.C., called the Integrity Research Institut They have a handle on some of this material. Just promise me you'll keep my name out of it, okay'