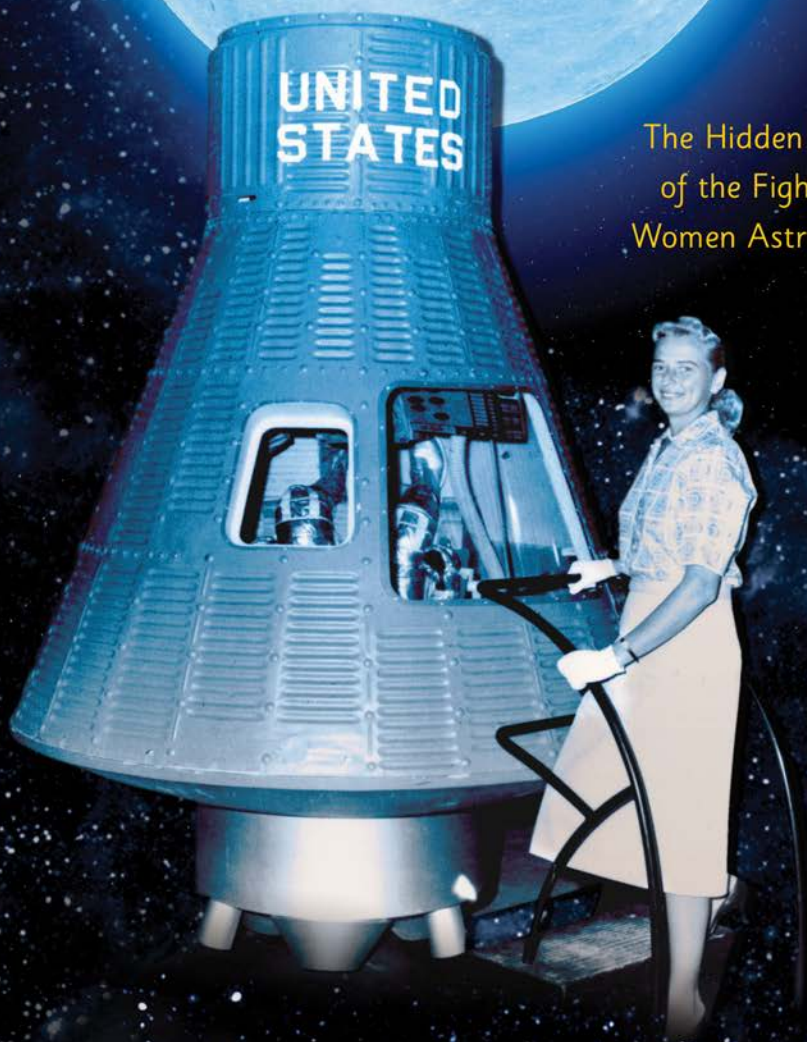


REBECCA SIEGEL

# TO FLY AMONG THE STARS

The Hidden Story  
of the Fight for  
Women Astronauts



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## PREFACE

**R**eady?" asked my flight instructor, Pete, his voice almost impossible to hear over the roar of our engine.

His warnings rattled through my mind: *Go easy on the pedals. Don't overcompensate. Keep the plane's nose centered. Maintain control.*

I nodded weakly and stared straight ahead.

*Here goes nothing.*

Pete released the brakes and we thundered forward. Our speed increased. When the dotted line down the center of the runway began to blur, I cautiously pulled back on the yoke. I felt the nose grow light and begin to lift. I gave the yoke another tiny tug. And just like that, I pulled an airplane into the sky.

You see, I'll do just about anything for research.

When I first stumbled upon the story inside this book, I didn't anticipate how incredibly inspired I'd be by it all. And I never could have guessed that I would find myself at the controls of a single-engine airplane. But research takes you on funny journeys, and I think it's my job as a nonfiction author to embrace each bump and turn.

## viii • TO FLY AMONG THE STARS

*To Fly Among the Stars* is a true story. The details come from a variety of sources, including memoirs, interviews, flight plans, newspaper articles, airplane manuals, photos, videos, and letters. Anything that appears between quotation marks comes from one of my sources and reflects the exact words of these very real people.

To put this story in context, I worked with military pilots, commercial pilots, and private pilots. I researched the history of aviation in general, and got a little hands-on experience as well.

I've done my very best to re-create these exciting moments in history for you, my reader, so that you might feel the energy and suspense and yes, frustration, of this iconic American era. It was a time when aviation technology advanced at a breakneck pace, while gender rules remained stubbornly old-fashioned.

I was moved by both groups of pilots in this tale. The men were talented aviators who bravely jumped at the chance to explore space. The women were outstanding pilots who fought valiantly for the same opportunity. I hope that you find this story compelling, and that it encourages you to follow your dreams, whatever they may be.

Wishing you blue skies and tailwinds,  
Rebecca Siegel







# PROLOGUE

FEBRUARY 20, 1960

**T**ick, tick, tick, tick.

Somewhere behind her, a metronome clicked a ruthless beat. Jerrie Cobb pumped her legs furiously on the stationary bike, straining to match the rhythm. Sweat ran down her back.

*Inhale. Exhale.*

Thick plastic straps held a mask over her mouth and nose. A long black tube snaked from the mask through a grid of metal scaffolding in front of the bike. Cobb could hear her breath filling the tube. Each exhale pushed it farther away. Her exhales would be tested. Everything would be tested.

*Keep pedaling.*

The mask held Cobb's face in place. She sensed someone approach her bike from the rear. He slid something against the back wheel. The resistance suddenly increased, and her muscles screamed with effort. Her legs seared with pain as she pushed forward. She would not slow down. She would match that metronome.

A cluster of scientists stood at the edges of the room, observing her and scribbling notes. Occasionally, one would step forward to adjust a piece of her equipment or check an instrument's reading before retreating to his watchful perch.

Jerrie's lungs burned. Sweat stung her eyes. Her breath was ragged now.

Off to her left, she saw a gray-haired physician give her a quick nod. It was a tiny gesture of encouragement. Jerrie knew what it meant: *Keep pedaling*.

This was a test. It was the same test that the Mercury 7 astronauts had taken just a year earlier. If Cobb did well enough, maybe she could become an astronaut, too. Her heart pounded as she fought the temptation to quit. "I had to go on—that I knew," she said in later years. "If riding a bicycle would get me into space, then ride I would."

*Tick, tick.*

The metronome stopped.



# CHAPTER 1

---

## FLIGHT DREAMS

Just sit there . . . don't *touch* anything and don't *do* anything until I tell you."

Twelve-year-old Jerrie Cobb nodded gravely to her father. He gave her seat belt one last tug to make sure it was as tight as it could be, then turned to face the controls in the front seat of the cockpit. The tiny plane roared to life before beginning its bumpy trot down the runway. A 1936 Waco biplane couldn't go very fast. In fact, it maxed out at around 90 miles per hour in the air. But for a kid sitting on a stack of pillows in an open cockpit, the sense of speed was overwhelming. Jerrie might as well have been riding a rocket.

The blonde and freckle-faced girl knew some of the basics of flight, things she'd picked up from her father: *Don't climb too fast or you'll stall. Don't lose sight of the horizon. Keep steady pressure on the stick. Watch your fuel levels.* But there was so much more to learn.

They skipped once, twice, and then lifted off. If Jerrie

made any sounds, surprised gasps or happy shrieks, they were whisked away by the wind. It felt like the sun was warmer up here. Brighter, too. Her tiny backseat was brilliantly lit.

Below them, the little Waco's shadow traced a wobbling path across a dusty brown-green landscape. Clusters of neat, boxy structures proudly dotted the scrubland. They were Army Air Force barracks, mess halls, and airplane hangars. Troops of cadets in crisp green uniforms scurried between drills and lectures. Sheppard Field was cranking out the soldiers and airplane mechanics needed to supply American efforts in World War II. Down there on the ground, all anyone seemed to think about was war, bullets, bombs, and victory. But up in the air, things were different.

Jerrie's eyes grew wide behind a pair of enormous flight goggles. She'd begged her father for weeks for the chance to fly. And now she was overcome with wonder. The Waco's engine buzzed and its wood propeller spun. The fabric-covered wings hummed and sliced cleanly through the air. Jerrie realized just how foreign flight really was. Everything was different in the sky. Her feet, which hung a full twelve inches above the pedals, started to happily bounce.

Then, from her backseat perch, Jerrie saw her father raise both hands into the air to signal her. They were at 1,000 feet. It was her turn to fly. She reached down to take the stick between her legs. Her father tipped his hands forward. Jerrie pressed the stick forward and felt the nose of the Waco dip. Her stomach lurched. The plane growled

deeply. She pulled back on the stick gently, careful to avoid a stall, and watched as the horizon dropped out of her line of sight. The growl changed into a whine and then a cheerful hum. Amazing! She was flying.

The next hour was a happy, bright, meandering dance. Jerrie tried out different maneuvers following the hand signals of her father. Together, they climbed, dipped, and banked. When he finally gave her the “hands off” signal, she had reached a level of joy that bordered on delirium.

That afternoon, a pilot friend of Jerrie’s father watched the unlikely duo climb out of their little biplane.

“Good flight?” he asked.

“Training flight. Jerrie just had her first lesson,” her father answered.

“Better log it,” the pilot said, turning to look at Jerrie. “Every student pilot must keep a log.”

The pilot then pulled a memo book out of his pocket and drew a few quick columns down the first page. He grinned a little while he worked. This was, after all, a bit silly. She was just a kid!

But none of this was funny to Jerrie. She knew that pilot logbooks were a record of their time in the air. They were like résumés. The very best pilots were the ones with the most hours.

Jerrie watched seriously as the pilot scrawled her first entry in the makeshift log. Below it sat rows and rows of empty spaces. She made a promise to herself: All those spaces *would* be filled. She *would* become a pilot.

PILOT'S NAME	DATE	LOCATION	FLIGHT HOURS
<i>Jerrie Cobb</i>	<i>1943</i>	<i>Wichita Falls, TX</i>	<i>1</i>

In truth, Jerrie's dream was a long shot. Few pilots in the 1940s had even seen a woman in an airplane hangar, unless of course she was a secretary or cleaning lady or somebody's sweetheart. Flying was men's work, plain and simple. It was physical, technical, and dangerous. It was dirty, too. It was everything women had been told they couldn't handle.

Despite this, Jerrie Cobb wasn't the only girl dreaming of a career in the air. While she was logging that first hour of flight, women across the nation were already gazing at the skies, their eyes filled not with wonder but with raw ambition. They stepped out onto their penthouse balconies, their suburban backyards, their tenement back alleys, and they squinted as airplanes buzzed overhead. The Great Depression had come and gone. They'd budgeted and farmed and scraped and saved, and here they were. Still standing. Now a new frontier presented itself in the sky and they dared to ask, *Why not?*

In 1929, two years before Jerrie Cobb was born, a group of pioneering female pilots had gathered in a dusty airplane hangar for a historic meeting. They saw the sky for what it was: a new, brave, uncharted world for both men *and* women. They were a ragtag crew that day; some were dressed in flapper attire, with ankle-length skirts and bell-shaped hats. Others were dressed to fly. They wore trousers,

boots, and fur-lined bomber jackets. One woman looked as though she had just stepped off a rough flight. Her oil-stained coveralls fell in crumpled folds around her wrists and ankles, and she hadn't even bothered to take off her flight helmet or goggles. She had work to do. They all did.

These women met that day to lay the foundation for an organization of female pilots that would outlive them all. They called it the Ninety-Nines. The unusual name came from the number of members that first year: ninety-nine. There were ninety-nine women who were bold enough not only to be pilots, but to seek out a community of like-minded adventurers. In later years, the Ninety-Nines would span the globe. Members would fly airliners, fighter planes, and even spacecraft. But during that first meeting in 1929, the women's goals were modest: Organize. Unite. Encourage. Flight was hard for women. The Ninety-Nines hoped to make it a little easier.

At first, many female pilots came from very wealthy backgrounds. Flying was expensive. Ruth Nichols, one of the women who attended that first meeting of the Ninety-Nines, was a New York socialite. She used family money to fund her passion. She shelled out \$500 to get her private pilot's license in 1921. This was an almost unthinkable expensive sum at a time when most Americans earned between \$1,000 and \$3,000 a year. Flight lessons weren't the only expense. Pilots also needed something to fly. They could try to buy a plane, but with price tags that were almost always \$500 or more, plane ownership was often out of the question. Women who didn't own their own planes had

to rent them, which meant paying for their time in the air. Amelia Earhart, another founder of the Ninety-Nines, worked as a telephone company clerk and photographer in order to pay for her early flight lessons. Her instructor's fee was steep: \$1 for each minute in the air.

Over time, as airplanes became more common and airtime more available, the population of female aviators began to grow and change. By the 1930s, the sorority of women pilots was no longer dominated by socialites and the daughters of business tycoons. It was diversifying. Farm girls, schoolteachers, and housewives had begun climbing into the cockpit. Earhart did her best to describe female pilots in her 1932 autobiography, *The Fun of It*: "There are slim ones and plump ones and quiet ones and those who talk all the time. They're large and small, young and old, about half the list are married and many of these have children. In a word, they are simply thoroughly normal girls and women who happen to have taken up flying rather than golf, swimming, or steeplechasing."

Of course, Earhart wasn't referring to just any "thoroughly normal girls." She was talking about *White* girls. Aviation was an activity for a predominantly White population. Only a very small number of minority men—and an even smaller number of minority women—found flight schools willing to admit them, teach them, and certify them safe to fly. Bessie Coleman, the first Black American woman to fly, had to go all the way to France to find someone willing to teach her. Despite this, she earned her international pilot's license in 1921, becoming what American journalists



called a Negro Aviatrix. An Asian American woman wouldn't become a pilot for another eleven years. When she got her pilot's license in 1932, newspapers across the nation showed enlarged photos of Katherine Sui Fun Cheung's beaming face, proclaiming "Miss China Goes Aloft."

The early 1940s, the era of Jerrie Cobb's first flight lesson, would see a brief surge in the number of women pilots. In 1941, the Ninety-Nines counted 935 licensed female pilots in the country. That number would more than double when an experimental national flying organization, the Civilian Pilot Training Program (CPTP), allowed a generous female enrollment ratio: one girl for every nine boys. The idea was that women typically controlled their household finances, and would be more likely to allow their husbands to do things like buy airplanes if they themselves had had the chance to enjoy flight. It was a sexist premise, but hopeful female aviators jumped at the opportunity all the same. With the help of the CPTP, the number of licensed American women fliers rose to about 2,000. Compared to male pilots, it was still



Ruth Nichols, decked in fashionable attire, waves from the cockpit of her Lockheed Vega.

a measly number. Females made up just over 1% of the American piloting community. But it was progress. Their tiny wedge of the pie was expanding.

Then in mid-1941, a war loomed large on the horizon. The CPTP started to take on a military feel, and women were promptly punted out of the program. It seemed as though nobody wanted to “waste” aviation instruction on women when the country’s future war fliers needed it first.

World War II soon bloomed into a deadly global conflict, and the face of America’s aviation force changed drastically. Able-bodied male pilots were plucked from their familiar cockpits and transplanted into different, weaponized versions in Europe, or the Pacific, or Africa. Hundreds of thousands more earned their wings through military flight training programs. These aviators flew new, sophisticated aircraft. Giant bombers. Zippy fighters. Seaplanes. Gliders.

As men grew comfortable flying their war planes overseas, the women on the home front settled into the sturdy old planes the men had left empty. They flew commuters to and from meetings, transported goods, and crop-dusted fields. Their time in the cockpit was not glamorous. They earned small but livable wages while learning confidence in the air and a love for flight.

Some women joined the Civilian Air Patrol (CAP). During the war, male CAP pilots were encouraged to fly along American coastlines, searching the inky seas for the telltale shadow of German U-boats. Female CAP pilots weren’t allowed to fly the coasts. They were, however,

allowed to teach and receive CAP flight training. For women with no other access to a cockpit, the CAP seemed just fine.

At the same time, a short-lived program called the Women Airforce Service Pilots (WASP) gave a select group of women military flight training. Between 1942 and 1944, WASPs flew transport missions and shuttled military personnel between American bases. They also worked as test pilots, trying out newly repaired airplanes before they were handed off to male pilots for use in the war. Training to become a WASP was grueling. It involved months of classroom instruction, physical exercise, and flight lessons. Despite the intense training, graduates of the WASP program didn't enjoy the fruits of their labor for long. In December of 1944, the program was disbanded. The public just wasn't ready to see a woman fly a bomber, even if she wasn't anywhere near combat.

In 1945, the war ended. Seasoned male pilots flocked back to their old jobs in droves. New pilots, freshly equipped with military flight training, flooded the job market. And employers greedily scooped them up. You're a navy pilot? Hired! Army man? Welcome aboard! Their planes and passengers would be safer than ever before. Airlines, ferrying companies, and flight transport business owners signed their paychecks with pride. Anything to support a war hero.

At the same time, female pilots were quietly pushed to the side. Their novelty had faded. The sense of solidarity and sisterhood that sustained the home front during those



A group of WASPs pose in front of a military aircraft, *Love Field*, in Dallas, Texas, 1943.

long years now felt wilted, embarrassing. Sidelong glances and drawn-out silences sent the clear message: You're not wanted anymore. Go home.

Some women pilots welcomed their sweethearts home from the war with open arms, but others greeted these veterans with a scowl. Each triumphant warrior striding down Main Street represented another cockpit filled. Another job denied.

The conclusion of the war ended many female aviation careers, but not all of them. The women who could afford it maintained their skills by paying for their flight hours. But

very few managed to sustain livable wages just from flying planes. Some women stuck it out anyway, finding odd flight jobs here and there. They worked as flight instructors, stewardesses, even airline bookkeepers. Anything to stay close to the airfield.

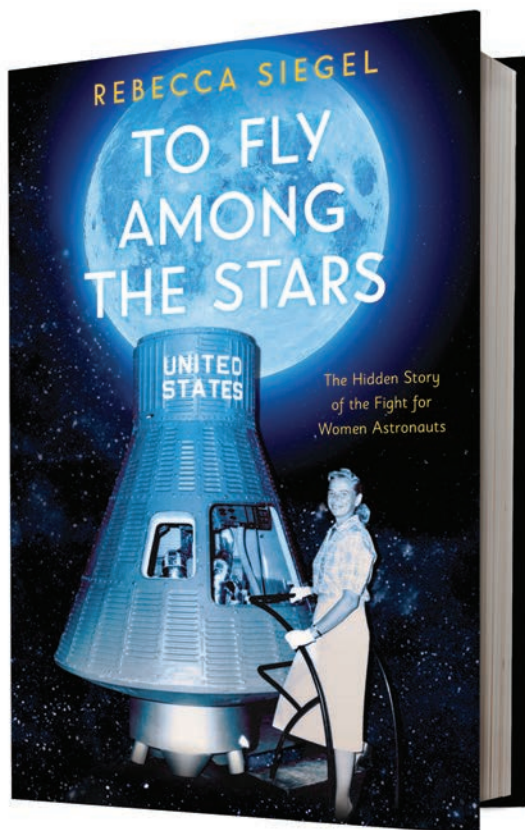
Among these many amazing women who managed to maintain a healthy flight habit in those postwar years, thirteen of them, spread all over the country, were setting the stage for an incredible future.

There was Myrtle Cagle, who at age fourteen had been the youngest person ever to earn a pilot's license in North Carolina. Jane Briggs Hart and Jerri Sloan Truhill had both started their piloting careers in secret, sneaking out of their respective childhood homes to take flying lessons that their parents had forbidden. There was Bea Steadman, a spark-plug inspector who worked as many hours as she could to afford precious time in the sky. Rhea Hurrle had grown up in Minnesota, staring at planes above her and telling anyone who would listen, "Yeah. I can do that." Sarah Gorelick and Gene Nora Stumbough were both impressive air racers who made a habit of tearing across the skies in high-speed battles. Jan and Marion Dietrich were identical twins living in California. Jan was a flight instructor and corporate pilot. Marion juggled flight with her career as an aviation journalist. Jean Hixson was a WASP turned school-teacher who never gave up her flight ambitions after the program dissolved. Irene Leverton was a Chicagoan who could fly and fix just about every plane at her local hangar.

Wally Funk was the youngest of the bunch but made up for lost time by earning flight credentials at a breakneck pace. And finally, there was Jerrie Cobb. That first flight in the Waco was a prelude to decades of joy in the air.

These thirteen women didn't know much of one another yet. Some had never even met. Despite this, their lives would soon intersect in one of the most significant events in American aviation.

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