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DENISE MILLER WAS soaring.

As the Corpus Christi sun reflected off a sea of T-34C Turbo Mentor prop planes on the ground below, Ensign Miller dipped, flipped, circled, cut the engine, recovered, and executed a series of touch-and-go landings, kissing the pavement at 105 miles per hour and guiding her plane back to 800 feet in less than a minute. After 90 minutes in the air, she brought the plane down and emerged from it in a flight suit emblazoned with a patch of BU Terrier mascot Rhett. Miller eased off her helmet, pushed back some renegade strands of hair, and flashed a jubilant smile.

This was her first aerobatic solo flight, and though she pulled it off without a hitch, in the days leading

up to it she was pushed to the limit. “They simulate engine and electric failure,” she said. “They task-saturate you and see if you can handle it in the air, and it’s really stressful. You realize that if you do one wrong thing, it can escalate into a very bad situation.”

Miller (ENG’10) was in Texas, training to join the elite ranks of naval aviators. Confident but unpretentious, she had spent months training to pilot and navigate, flying, or thinking about flying. Like many of her 15 Navy ROTC classmates at BU, Miller, who studied mechanical engineering, had always dreamed of becoming a pilot. And while she knew that most in her class would succeed, nothing was guaranteed.

Some hopefuls choke their first time in the cockpit. Some flunk the physical exam. Miller had a few advantages: an engineer’s exacting brain, an athlete’s endurance, a taste for adventure, and a family that bleeds Navy. Her sister is a 2008 U.S. Naval Academy graduate and a surface warfare officer on the aircraft carrier USS *Ronald Reagan*, and her parents, her mother a retired senior chief and her father a retired master chief, met as young naval enlistees stationed in Guam.

Still, Miller’s path to the solo flight had been a marathon test of will. There were days when she had butterflies in her stomach all the way to the airbase, hoping she wouldn’t freeze up when she got in the plane. Although she reviewed



# fly

FROM DREAM  
TO TAKEOFF

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HOW ROTC MAKES IT REAL | BY SUSAN SELIGSON

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There were times when Denise Miller worried she might forget something, like pulling up the landing gear after takeoff. Many fliers do that once or twice.

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emergency procedures to the point of exhaustion, she sometimes couldn't deliver the right answers in preflight briefings, where performance, fliers say, "buys your ticket to the plane."

There were times when she worried that she might forget something, like pulling up the landing gear after take-off. Most of the young fliers in her group had done that once or twice, putting the landing gear at risk when they reached top speed.

"I'd get mad at myself," she said. "But if I flew afterward and the flight went well, I felt redeemed."

Three months earlier at the Naval Air Station (NAS) across the gulf in Pensacola, Fla., Miller advanced

from a four-week-long initial training phase to 15 hours of training in a small civilian Cessna to aviation preflight indoctrination. She tackled a six-week intensive course load in aerodynamics, engine systems, meteorology, navigation, and flight rules. The dry class-

room material was offset by the very wet business of water survival tactics, where she learned how to make a life preserver out of her pants.

After the transfer to Corpus Christi and 80 more hours in the air, Miller and the Navy would decide (depending on her performance and a wartime military's needs) whether she would fly carrier-landing fixed-wing planes, including Top Gun Tailhook fighter jets, sturdy Seahawk and Sea Dragon helicopters, used in combat search and rescue, or the P-3 Orion, a frontline patrol aircraft dating back to the 1960s and still flying over Iraqi and Afghan airspace. (About 25 percent of trainees don't get to fly their first choice of aircraft.) On the rare occasions when she allowed herself to daydream, she focused on the moment, date undetermined, when her proud family would look on as her commanding officer presented her with a set of gold wings extending from a shield and a fouled anchor—the insignia of a warfare-ready naval aviator.

The naval aviator program is one of four Navy ROTC programs at BU; the others are surface warfare officer, submarine officer, and Navy SEAL. Students attend summer training cruises, where they tag along with squadrons flying Navy aircraft. It was those stints, one with an F/A-18 fighter squadron and one with a Prowler squadron, that solidified Miller's decision to go into naval aviation.

The main job of Navy pilots is to provide attack, defense, and logistical support to the fleet of ships on the water below. They also have a role in antisubmarine warfare, search and rescue, and resupply missions. Unlike the arguably tidier lives of Air Force pilots ("They iron their flight suits," retired naval aviator Bob Norris wrote on a fighter pilot blog), Navy pilots live on ships, fly in terrible weather, and have to learn to land their craft on carriers. The prospect of their first carrier landing looms menacingly over aviator trainees almost from day one—that exhilarating, terrifying image of the "hook down, wheels down" moment when a plane flying 120 miles per hour throttles forward and slams to a full stop as its tailhook catches the deck's arresting cable. As Miller's Corpus Christi squadron leader, Lieutenant Ian Rummel, put it, "Flying onto the back of a boat during a storm is the hardest thing a human can do."

Miller wanted to do that in a jet.

#### PENSACOLA

After graduation and 10 days by the lake near her family's home in Clifton, Maine, Miller drove to this "Cradle of Naval Aviation," for her preflight indoctrination.

At NAS Pensacola, under the umbrella of CNATRA (Chief of Naval Air Training), Miller found herself swept into the current of military acronyms as an SNA (student naval aviator), completing her IFS (introductory flight screening), API (aviation preflight indoctrination), and PFT (physical fitness test), sweating through NAV (navigation) class, and pondering the airborne virtues of fixed-wing C-2s, F/A-18s, P-3s, and E-2s.

From combat-seasoned lieutenants and captains with base names like Flemmie and Swannee, she learned



At a ceremony in February, Miller (right) received her wings, which were pinned to her lapel by her sister, Lieutenant j.g. Sara Everett.

which planes use what fuel, basic stick and rudder training, and how to navigate in a 50-mile-per-hour wind, as well as the physics of flying and weather patterns. She got used to being saluted by enlisted men and women with more years and more experience.

She endured the barrage of technical training, but it was her first, hour-long solo flight, with three takeoffs and landings, in the Cessna 172 that marked Miller's most satisfying day. "I wasn't as nervous as I thought I was going to be," she said. "It was actually a lot of fun." And she came out of it persuaded that she really did have the nerve to be a pilot.

Like most pilots, the five-foot, five-inch Miller is compactly built. Her cherubic features are framed by long, light brown hair worn braided and pinned up like a Swiss milkmaid, in the prevailing Navy style.

Miller, whose squadron of 50 was about a quarter female, formed fast friendships with her roommates in the apartment they shared off base. She grappled with, then quickly settled into, the minutiae of base protocol, including the quirky, historic practices that seemed designed mainly to distinguish the Navy from the Marine

**WEB EXTRA**  
Watch a video of Denise Miller as she talks about her dream of being a pilot and about flight and survival training in Pensacola and Corpus Christi at [bu.edu/bostonia](http://bu.edu/bostonia)



Corps or Coast Guard. She learned who salutes whom, who in the Navy wears brown shoes (aviators) as opposed to black (surface warfare community), how to decipher enlisted men and women from officers based on insignia sewn onto their blue camis, and who wears their caps scrunched (winged pilots). She soon found herself using a pilot's vernacular, which ranges from the urgently technical, such as NATOPS (naval air training and operational procedures standardization) to the darkly whimsical—ground troops, for example, are “crunchies.” A submarine pilot is a “bubblehead.”

When it came to physical training, Miller's strength—she's a runner and was on her high school swim team—proved a major asset in water survival trials, ejection drills, and a mile-long swim in her flight suit. She found that the academic and physical demands of training served as antidotes to each other during the 10-hour days.

At one afternoon's NAV class, Miller fell into place with fellow naval officers,

enlisted men and women, marines, and flight surgeons. As senior marine on base, instructor Major Chad Swan (Swanee) is the archetypal jarhead, with a linebacker's build and hair shorn flat as a landing strip. Swanee kicks off NAV class with deafening *Top Gun* music and a carpet-bombing video. “Get ya at least awake,” he said as the bombs thundered down. “Does anyone here know what you call that many bombs?” Silence. “A shitload!” Swanee had his fun, but the subject was deadly serious and potentially lifesaving. A Cobra pilot by training, he completed seven operational tours: two in Kosovo, three in Iraq, and two in Operation Enduring Freedom. “Been there, done that a little bit,” he told the students. And then he plunged into the workings of the so-called whiz wheel, engine class, and a lecture on the virtues of JP-5 fuel (it's cheaper).

Later, the trainees headed to the NAS pool for the survival swim. Miller had already had to swim a mile after a simulated crash, and she was prepping for the mile-long swim in her flight suit. “I don't want to sound cocky,” she said, “but I thought 80 minutes to swim a mile,” even with the drag of a flight suit, “was pretty easy.” She also learned how to float to conserve energy while waiting for rescue and how to avoid being scorched if there's burning oil on the water. “I jumped off a 12-foot tower onto a float and dealt with simulated burning debris on the water,” she said. “That can happen in a plane crash, and

it could be two or three days before you're rescued.”

Several weeks later, it was time to advance to the next level, called

primary basic familiarization flying. And soon Miller was on her way to NAS Corpus Christi.

#### CORPUS CHRISTI

The June temperature in Corpus Christi hovered near 100 degrees, but Miller appeared cool and collected in her zip-up green flight suit. She spent the bulk of her days on the base's vast tarmac, with Sikorsky prop planes, helicopters, transport planes, and jets endlessly aligned like troops preening

for review. Helicopters, she said, were appealing. They hover, they grab, they swoop in and rescue people in the worst imaginable conditions.

For the moment, though, it was all Sikorsky all the time. Although the division is arbitrary, Miller's squadron—the Rangers—was in a good-natured competition with the other primary flight squadron, the Boomers. “The flying's easy—it's the takeoff and landing that's hard,” said Rummel. The plane Miller was flying, a T-34C single-engine prop, is known as the Volkswagen Beetle of aircraft—endlessly reliable and easy to fix.

Like just about everything on the base, time flew, and the daunting aerobatic solo came up fast. Miller knew the requirements—the aileron roll, the barrel roll, the wingover, the loop de loop—and she was ready, so ready she could taste it.

When it was over, and Miller had nailed it, there was precious little time for celebration. She had to prepare for her first night flight the following day. That evening, she enjoyed a rare relaxed meal at a seafood place on Padre Island. Miller mused about the virtues of helos versus jets, a tough call for someone who still had a few months of training on T-34Cs.

By the time she finished, at the end of last summer, a funny thing had happened. Helicopters had lost their luster. Jets no longer soared through her dreams. The machine Miller wanted to pilot was the famously reliable four-engine turboprop P-3 Orion, a long-range surveillance and reconnaissance workhorse that has served the Navy for 50 years.

“I chose the P-3 for lifestyle,” she said. “I really wanted to work with a crew and be part of a team.” Miller will fly P-3s with a copilot and crews of up to 10 people. “And it's more secretive. People on the ground in tactical areas will have no idea we're up there.”

On February 24, 2012, at her winging ceremony at NAS Corpus Christi, Miller finally received her wings, which were pinned to her lapel by her sister, and fellow naval officer, Lieutenant j.g. Sara Everett. What was once a dream had become real—Miller was now a Navy pilot. And she'd have to order some brown shoes. ■

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**THE FLYING IS EASY. IT'S  
THE TAKEOFF AND LANDING  
THAT'S HARD.**

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