

EMILIE WAMSTEK/KEP

Flight Path

Teachers at New York City's Aviation High know the ups and downs of working for an airline. For many, it's still a second job.

BY HEIDI ERNST





Teacher Ralph Schmahl works on a vintage plane in the school's hangar.

It's 20 minutes after 8, and already this un-air-conditioned fourth-floor classroom in New York City is getting as hot as the engines George Zanetis is describing to his class. Still, the 15 boys and two girls can't help but pay attention. At times, the exuberant teacher is firing off an average of two questions a minute—"How are we going to go from linear motion to reciprocating motion?" "What's the purpose of the crank shaft?"

Dressed in a dark-blue oxford shirt and tie, black dress pants, silver watch, and white lab coat, Zanetis could pass for, say, a pharmaceuticals executive. He roams the room, demonstrates an internal combustion engine attached to a desk up front, works off his straight man (one of the school's assistant principals, who has dropped by to observe), and uses his interactive whiteboard to access computer animations off a CD-ROM.

One of his first topics is a history lesson about Nikolaus Otto's 1876 invention of the piston engine, the culmination of years of painstaking research by the doctor. After the discussion meanders elsewhere, Zanetis begins to recap. His first question: "What was Dr. Otto's first name?" The answer from a voice in the last row: "Lonely."

It is high school, after all. But Aviation High, a career and technical education school in the Long Island City neighborhood of Queens and the nation's largest aviation-focused high school, is a bit different—and so are many of its teachers. Required courses for all 2,000 students include the usual English, math, science, and foreign languages, but also airframe and power plant shops. A 5,000-square-foot annex at John F. Kennedy International Airport stocked with dozens of airplanes serves as a fifth-year classroom for 24 honors students chosen from about 150 applicants. FedEx just donated a Boeing 727 to the school.

But in Zanetis' power plant class, it seems as if the students, who wear not-too-stylish mechanics' coveralls over their Sean John jeans and Diesel sneakers, are hitting outdated books. A lesson about a 127-year-old technology? Unbelievably significant, as it turns out. Otto's invention is still used in every kind of aviation today, and the kids need to understand it well because about 300 of them will earn FAA certificates this year, and many will become airline mechanics, engineers, or pilots.

And the aviation industry, while still recovering from the aftershocks of the September 11 attacks, is in no danger of becoming an obsolete career choice. The business has rough landings every few years, and because of that, Zanetis and the other 50 mechanics teachers at Aviation are invaluable. All are former or current aviation workers, and three dozen are AHS graduates. They know how to train students for aviation jobs while helping them develop other skills to make them employable until the sector rebounds, and they've struggled through the same ups and downs.

"Two years ago, when business was good, 18 teachers also worked for airlines," says assistant principal Deno Charalambous, who graduated from AHS in 1976 and worked for 11 years as a mechanic and supervisor at Eastern Airlines, among other places. Between the tight job market and an increase in New York City teacher salaries, fewer than a dozen now work second jobs. Their motivations vary, and most took circuitous routes into the classroom, but these aren't full-time mechanics winging the teaching for some extra bucks or another bullet point on their résumés. Energized by watching kids learn and emotionally attached to the hum of a jet engine, they

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William Gaskin stresses attention to detail in his shop class with such projects as building wings.

mesh the worlds of work and learning in ways unusual even at a school that doubles as an FAA-certified repair facility.

On a summer Saturday of torrential rain, most of the seven spots in the American Airlines hangar at JFK Airport—just across a tangle of highwaylike access roads from the Aviation High School hangar—are full. A Boeing 757 with a fuel leak looms near the control center, where Zanetis is busy issuing orders to his staff. Already today there have been 12 mechanical delays. “The pressure is on,” the 42-year-old says, “because even a minute late is late.”

Zanetis, who pulls the afternoon shift at Kennedy five times a week, wanted more benefits and more freedom than a mechanic gets, so he now oversees more than three dozen of them. If he had gotten his way when he was younger, though, he’d have been a stage actor on Broadway, a half-hour subway ride from where he grew up in Queens.

When Zanetis told his Greek immigrant parents that he wanted to enroll at what was then the School of the Performing Arts in Manhattan, they suggested he work with his hands instead. Giving a whole new meaning to the term “waiting in the wings,” he dutifully studied aviation at AHS. Then, a few years after graduating in 1980, while working as a mechanic for Eastern Airlines, Zanetis got an associate degree in theater at the American Academy of Dramatic Arts. He eventually did some work off-off-Broadway, but never enough to make a living. So he stuck with planes full time, and in 1990, at the urging of two of his old Aviation instructors who were working with him at Tower Air, he moved his performances to the classroom. There, he’s likely to add such theatrical flourishes as using his body to show how a crank shaft moves (like the pedals on a bike), or joke about his students’ favorite entertainer—not 50 Cent, as he would have thought, but Frank Sinatra.

“I hadn’t considered teaching, but my first day in front of a class, I knew it was for me,” he says.

“It’s another way of fulfilling my need to show off.”

Technically, being a manager with American is his second job, but he really has more: counselor, mediator, psychologist, lawyer, safety inspector. And most of his school lessons come straight from all of those encounters. “I tell my students what a good mechanic needs, from attitude and ethics to attendance and safety,” he says. “I know who’ll be good just by seeing how they take tests and how they work with their hands on those Lycoming engines in the classroom.”

Whether they make it or not, they’re job-eager and want his advice. Until lately, Zanetis told them that jobs are available, even in a drooping economy. More recently, he’s been the bearer of bad news: Huge layoffs might mean the kids will need to find other work first. He reminds them not to worry; if you’ve got FAA certification, you can always pick up the work when the economy improves. He should know—he worked in real estate for three years in the late ’80s when the airlines tanked, until real estate sales did the same.

Money is important to most of his students, so Zanetis is upfront about how much they can make (starting salary for a mechanic: about \$50,000) and the benefits they’ll receive. When he first graduated, he and some AHS buddies working for Eastern in Miami would use flight passes to go to San Francisco and other hot spots for dinner.

Definitely a company guy—he’s wearing the same outfit as at Aviation, minus the lab coat, revealing “American Airlines” embroidered above the shirt pocket—Zanetis loves the perks of working with a commercial airline. He lives in a tony neighborhood on Long Island, put his wife, a physician assistant in vascular surgery, through medical school, and has given his kids everything

they need, he says, because he grew up poor and doesn’t want them to live like he did. For now, that gets him through his 13th year of working two jobs, sleeping four to five hours a night and, lately, missing his kids’ lacrosse and baseball games.

While the perks are nice, he plugs away because he wants his performance—and that of his students and employees—to matter. “Everybody knows everybody in this business. Your reputation precedes you,” he told his students earlier in the year. “So if you’re a screw-up, you won’t get in. Whether it’s drugs, a [juvenile delinquent] card or jumping subway turnstiles”—students laughed at his last point—“what you do now matters.”

Half a dozen of Zanetis’ former students sure paid attention when they heard his advice: They’re out in that downpour now, fixing planes for him.

Ralph Schmahl loves to be outdoors, no matter the weather. On a humid June morning, he’s helping his advanced airframe students push most of the two dozen planes from their classroom, a 100-by-100 hangar at one end of Aviation High, into the yard so the school can hold graduation ceremonies inside.

An alum of Jamaica High School, also in Queens, Schmahl started college with thoughts of being an electrical engineer. But his mother-in-law was a longtime secretary at Aviation, and one day her son brought home a wing he had made in the school’s shop class. “He’s going on and on and on about this wing,” says Schmahl, “and I thought it was pretty cool.” Schmahl transferred to the College of Aeronautics near LaGuardia Airport and eventually became an airline mechanic.

Seven years ago, his mother-in-law alerted him to Aviation’s search for substitute teachers. “I never sat there and said, ‘Know what? I want to teach kids.’ It wasn’t my thing. I went to school to teach planes,” he says. “When I started, some kids turned me off. Eventually they knew I worked for an airline and started asking a lot of questions. That’s when I started thinking this was a lot of fun.”

Schmahl now teaches the fundamentals of aircraft assembly, rigging, and inspection on so-called live aircraft. Among the planes procured



Mechanic George Zanetis, who’s performed off-off-Broadway, finds teaching a way to mix hands-on skills and a love of the spotlight.

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from airlines and alumni: a Piper Cherokee 140, an Aero Commander twin-engine turboprop, and even vintage planes used for skytyping. In keeping with Aviation High's rules, all of the work done must meet the FAA's return-to-service airworthiness standard.

Some of his students, all seniors and fifth-year "superseniors," will become mechanics. A few, like one from his class last year who's now at the John Jay College of Criminal Justice studying law, use part-time jobs at airports to pay for continuing education. Others "aren't FAA material," says Schmahl. But they all take their assignments seriously. They redo electrical and fuel systems, replace circuit breakers, and learn how to check various gauges and indicators. To celebrate this past year's 100th anniversary of flight, the hangar classes rebuilt four World War II-era airplanes.

The serious nature of the work—responsibility for passengers' lives and multimillion-dollar pieces of equipment—is reflected throughout the school. Aviation High is modeled, in some respects, after an airport: Each shop class elects a crew chief, tool chief, and foreman to shoulder important responsibilities. AHS is among the New York City schools with the fewest security agents, adds friendly-yet-firm principal Eileen Taylor, "because we don't have as many serious problems. The kids know we mean business."

"As a mechanic, you have to follow certain rules, and that's how we have everything here, very structured," Schmahl says. "Everybody has to be in class, everybody has to be seated."

And everybody calls teachers "Mister" or "Missus." Most of the time, there's no surname added, just the title. "It's hard for them to remember all the names," says Schmahl. "They call me Mr. S, Cowboy, Yo... but they're not disrespectful. I don't take it the wrong way."

In truth, they probably get a little more creative with nicknames when addressing Schmahl. On this more relaxed day at school, the 37-year-old married father of three

could be mistaken for one of them. He wears a gold necklace, a small diamond in his left ear, jeans with a pager on the belt loop (on call 24 hours a day, he supervises crash recovery for American Eagle), a bright yellow T-shirt, and tennis shoes—and he has a parrot tattoo on his forearm. Schmahl's youthfulness also might have had something to do with his students painting, on the side of a Cessna 150, a picture of assistant principal Charalambous surfing, with the caption "Mr. Good Looking."

Schmahl, who works 12-hour shifts at LaGuardia

14 days a month, often gets only three to four hours of sleep a night. He's always loved working at night, he says, and his students give him the energy he needs to maintain his grueling schedule. "At the airline, I give the crew a little guidance, and they do the work," he says. "It's the same at school. But I can't tell you the excitement I get when the kids do it and they see what they did actually works."

As he's moved into management, that kind of excitement is often missing from his second job. That's why, on another rainy weekend, with plane




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after plane after plane lined up on the runway and all kinds of "nuisance calls" coming in, Schmahl really wishes he were "on the line," turning wrenches with his guys, sweating under some of the 50 shuttle flights that mostly navigate the Eastern seaboard. Instead, he's driving guests around, making phone calls, and working on his computer.

"Two years ago, if you had asked me if I wanted to leave one job, I would have said teaching," he says. "But now, it'd be the airport job. It doesn't have the same thrill, the same satisfaction as it used to."

But a set of tools is missing, and Schmahl assigns himself the sleuthing. He drives to a hangar, opens the door of a small jet and hoists himself inside, legs dangling while he searches. Like any proud mechanic, his hands are always dirty.

Toiling outside of the hangar in cold or rainy weather doesn't usually excite his students, but Schmahl hammers home that to be an airline mechanic, you have to really *want* to do it—all the time. "You have to face the elements on the job," he tells them, "so you have to do it here."

Most of Aviation's students also wouldn't care much for what another of their teachers, William Gaskin, is doing at his job as a mechanic right now: arriving at JFK Airport at 4:15 a.m. to taxi a 747 from one gate to another. Well, it would be awesome to drive it; the getting-up-early part would be the drag.

But Gaskin, who teaches full time at Aviation High and spends most weekends fixing commercial, cargo, and freight planes for Horizon Aviation Service, is wide-awake as he winds through an odd assortment of vehicles in the pitch-black Hangar 4. The office looks like a place that services car brakes—functional, drab, fluorescent-lit—with a holding pen for tools that would put most Home Depots to shame.

But there's no one inside to tell Gaskin where the plane is. He grabs his tool bag and gets into one of Horizon's white pickups and travels the maze of roads that you never see as a passenger—past "fuel farms" and behind hangars—till he reaches the Japan Airlines hangar. The plane, however, isn't there. Another phone call sends him on a search for tail number N534, a Boeing 747-200 at the Korean Air hangar. Five crew members are changing a tire, and most are dressed like him: navy blue work pants and shirt, blue airline jacket (Gaskin's says "TWA"; he was laid off in October 2001 after choosing to continue teaching instead of moving to St. Louis), and work boots, with an ID badge and ear protectors around their necks. "This is it," he says. "We'll just walk the wings and do light maintenance. They'll have their own crew move it."

After climbing three flights of stairs, Gaskin folds into a seat in the cockpit. He's intimately familiar with the hundreds of knobs, buttons, lights, gauges, switches, and dials. This kind of knowledge didn't just come from his time at AHS in the mid-1970s or a fifth year at Teterboro School of Aero-

nautics in New Jersey. Then, as now, students learned only basic systems; once you've gotten a job, that airline sends you to at least 40 hours of training to learn about a certain type of plane. Gaskin turns the navigational lights on, and a walkie-talkie call from a mechanic (or AMT, for "aircraft maintenance technician"; acronyms reign supreme in the airline industry) signifies that the lights are working. He shuts them off, along with the APU (auxiliary power unit, meaning the jet engine), and returns down the stairs into what is now daylight.

Gaskin helps change another tire—pushing, supervising, working the jack, tightening safety bolts, checking pressure—then climbs up on one to service the hydraulics system. "This is something we do pretty much routinely," he says.

Routine is of vital importance, the 44-year-old divorced father of two grown daughters constantly stresses to his students. "Tires and brakes will always be fixed the same way, but you could be in violation if you don't use current FAA guidelines. I drill it into them to go to the FAA maintenance manual to check everything, to be accurate," he says. "They're about sick of it when they leave my shop, but when they get to a hangar, they've got a general idea of what to do."

Back at Aviation, students in Gaskin's sophomore composite airframe shop class are lined up at his desk in the center of the cinder block room, getting what should be final sign-offs

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from him as the "inspector." For five months, his students have been in their sixth-floor shop creating a model airplane wing—not much bigger than two file folders—with some of the same materials used at airlines. As Gaskin ventured earlier, some are probably sick of this project, but at least they have a general idea of how airplanes are manufactured. One just had his wrecked (purposely) by the teacher, and after filling it with fiberglass and resin, then sanding it down, he's getting ready to repaint it. "I had to write up a report about the damage," he explains, "because that's what would happen at an airline."

From making the pine jig board and hardwood ribs to applying fiberglass and installing a functional navigation light, students have followed the teacher's checklist to the letter. "Everything is in a logical sequence, just like at the airport. That way, you make no mistakes and don't become complacent," says Gaskin, who looks quite different in his school uniform of a plaid shirt and gray chinos; the equivalent of his tool bag is the eight pens and pencils accessorizing his front shirt pocket.

It's obvious looking at the final wings that they are, one, made by teenagers (lots of dolphin, flame, and heart designs), and two, the products of a true melting pot. One girl from the Bronx is painting the Puerto Rican flag. A boy from Brooklyn is designing the flag of the Republic of Congo. The students can see the United Nations building out the front door, about two miles dead west, and their class—actually, the entire school—seems a direct reflection of its global reach.

The Puerto Rican girl is already working on her pilot's license and wants to join the U.S. Air Force. Another Aviation student, a senior in the ROTC program, awaits an acceptance letter from the U.S. Naval Academy. How could they and so many others possibly know by the age of 14 that they'd want to work with airplanes? "Some look up in the sky and say, 'Wow,'" says principal Taylor. Others have an older brother or sister who attended Aviation.

"I always liked things that fly," says Gaskin, who applied to attend Aviation with a friend whose brother went there. "And I liked *Lost in Space*. I was at home alone a lot in Hollis, Queens, when my mother worked, so I had quite an imagination. I would make spaceships out of beer boxes, drawing on dials and indicators."

Gaskin, Zanetis, Schmahl, and the other mechanics instructors weave their own dreams and experiences into their lessons, teaching not only airplane mechanics but also a broad range of technical and life skills—from welding to computer lit-

eracy. Whether at Aviation High or working their other jobs, they're quite serious about all kinds of education. Gaskin, for example, couldn't resist giving a visitor a quiz while offering a tour of the 747 he was fixing. "That's the wing gear. Left, right wing gear," he said as he pointed. "And that's the body gear. So what's that?"

"Left, right body gear," said the onlooker.

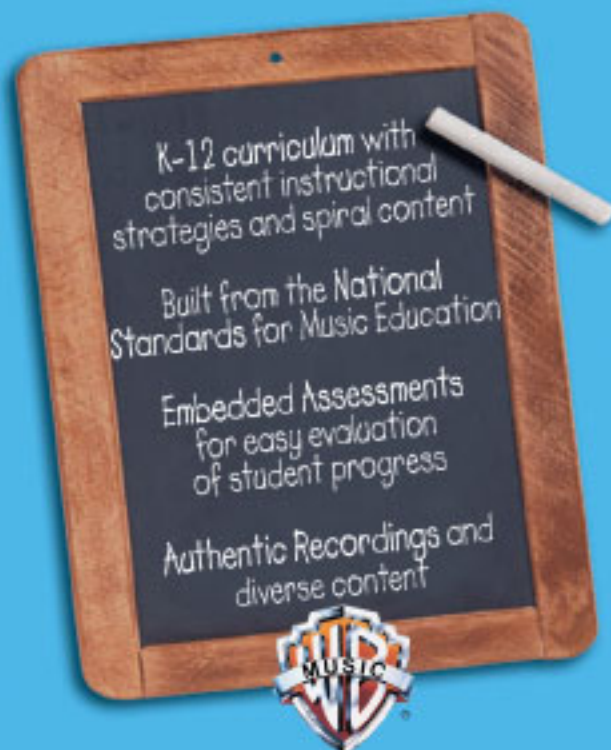
"Very good," he replied, almost impressed. "You passed the test." ■

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