



The future of ab initio professional flight training

by Amy Laboda

Can we meet the demand, and how?

There are 365 days in a year. If CAE group president for civil aviation training solutions Nick Leontidis's math is correct, he estimates that moving forward the industry must hire 70 new pilots a day to meet staffing needs. That's just to accommodate airlines. The world of corporate aviation and even the military will feel the pinch, too, as airlines compete for every qualified pilot willing and available to fly.



How To Grow a Pilot

It takes roughly two to three years of intensive classroom, simulation, and flight training to grow a fully qualified jet pilot from scratch. The industry has a lot of recruiting, training, and harvesting to do to come up with a couple hundred thousand of those in the next two decades.

When it comes to ab initio (from the beginning) flight training for professional pilots, the landscape is changing, and fast. What was once a simple choice for a fledgling of “shall I learn my skills in an ‘academy’ or ‘mom and pop’ (small independent flight school) environment?” now feels more like selecting from a menu of training possibilities. Those options come with a host of fine print that, if not carefully perused, could trip up a promising career from the start. Even more critical, this education comes at significant cost, but that cost can also vary. So, how does one fathom value in flight training?

Someone who wants to be a pilot today has to ask not just, “Where do I train?” but also, “How do I most efficiently learn and perfect the skills I need?” Airline pilot-style training by a flight training academy has often been considered the gold standard because of its inherent standardization and the rigorousness of most programs worldwide, but even the structure and syllabi by which future pilots train and are certified at academies has changed with the times.

In some venues, such as the U.S., the minimum experience requirements for transitioning to the right seat of a commercial airliner or left seat of a corporate jet have changed. Elsewhere, new ICAO and EASA ratings make it a quicker ride to the right seat, while new airline transport pilot (ATP) regulations in the U.S. are credited with creating taller hurdles for pilots to jump over, slowing the process significantly.

Only one aspect of professional flight training remains the same: it is still expensive to learn to fly and gather enough flight experience to qualify for a first officer position on a corporate jet or for an airline anywhere in the world. And more now than ever, that cost burden is borne by the student and his or her family. That too, however, may be changing.

The Way It Was

Before 2012, how you started a career as a professional pilot was a matter of choosing how you wanted to spend your money, if you had any money to spend. You could just go out to your local airport flight training facility, most likely operating under Part 61 of the FAA regulations, and start your training, accumulating the private, instrument, and commercial ratings as rapidly as you could afford. There was always the chance you could earn employment on the airport grounds to help you finance the endeavor,



and many flight schools hire those they train as dispatchers, ground school instructors, and flight instructors.

If speed-to-first-job was your goal, you might enroll in a Part 141 academy-type program that could get you to a commercial certificate in only 190 hours of flight experience (the Part 61 program takes 250 hours). Veterans with benefits gravitated to Part 141 programs, but financing was often a stumbling block for the average candidate, who needed to come up with a lump sum to begin training, and several more lumps of cash to keep going to graduation.

A less speedy—but smart—pathway choice was to enroll in a college or university flight program. A college degree could come in handy at some point, perhaps even spawning an alternative career. Many wannabe pilots focused on degrees in airport management or meteorology or even aviation maintenance management or manufacturing, engineering, and design. The thought was that if they couldn't find a flying job after college, at least they could stay in aviation. Often enrolling in a university program opened up alternative methods of funding, including government loans and scholarships.

And if you had no money at all to spend on learning to fly? There was always the military. The Air Force, Marines, Army, Navy, and Coast Guard—yes, even the National Oceanic and Atmospheric Administration trains its own pilots. Ranging further afield, the U.S. Forest Service, Drug Enforcement Administration and local police have also been known to “grow” their own pilots, and potential for flying turbine-powered aircraft exists in every one of these public-service and defense divisions.

No matter which path you took, with a commercial certificate and some persistence, you could get a job flying, usually flying skydivers, pipeline patrol, towing banners along the beachfront, or once having logged enough flight time, flying charter aircraft for your FBO or a private owner or hauling documents for banks or cargo at night. At that point, you probably had amassed a few hundred hours, perhaps just over 1,000, of flight experience, and maybe, if you were flush with cash, a multiengine rating. Many commercial pilots earned a flight instructor rating next, because teaching can be one of the quickest ways to earn a living flying and amass more flight experience at the same time. It is not, however, one of the easiest ways to rack up flight hours.

Many, though, were hired into the right seat of commuter airlines and freight haulers, because back then they could hire freshly licensed commercial pilots as first officers. Some pilots were also hired onto the right seat of private corporate aircraft, and a few lucky, well-connected individuals actually made it onto an airline flight deck with just a commercial certificate, multiengine rating, and a few hundred hours of flight experience.



A few airlines handpicked “cadets” right out of year 12 of secondary school, mostly in Europe, India, and Asia, and hired them, trained them, and put them on the flight deck. And every now and again a corporate flight department or government/public service entity would choose a worthy employee with the desire to fly and train them. (Boeing takes engineers and makes them into test pilots, for example; many police and the forestry service also train their own).

Contrary to what many believe, airline ab initio programs dwindled to a few by the 2000s, when the unit seat-mile profit margins narrowed precipitously, and one after another, airlines used bankruptcy as a means to restructure and satisfy stockholders’ demands for profit.

The Law of Unintended Consequences

The series of events that set our current pilot shortage into motion goes back to nearly the turn of the century. In 2001, after the World Trade Center disaster, it became suddenly difficult for anyone who was not a U.S. citizen to learn to fly in the U.S. That caused a major contraction of the flight training industry in the country, which had until then trained some 80 percent of the world’s pilots. Subsequent economic woes stifled any recovery.

“Many programs shrank, paring down aircraft and infrastructure after 2001 and the recessions that followed,” said David Ison, president of the University Aviation Association (UAA) as well as research chair and associate professor of aeronautics at Embry-Riddle Aeronautical University Worldwide.

The [Colgan Air crash](#) eight years later changed the entire system by which pilots had progressed to the right seat of a Part 121 operation. A substandard captain (who had failed numerous airline check rides over time) and an exhausted copilot made a fatal mistake on approach into Buffalo, New York, and crashed. Angry families unhappy after the NTSB investigation pushed the U.S. Congress to act. The legislative body drafted and passed Public Law 216-111 in 2010, mandating that all Part 121 airline pilots possess an ATP. The rule increased the training requirements for an ATP as well (these requirements increased the cost of that training, too). There were exceptions honed into the rule for pilots trained by a narrow list of university programs, and for pilots trained by the military, allowing them to earn an ATP with significantly less total flight time, but the age of 250-hour pilots in the right seat of airlines in the U.S. was over.

Some airlines moved first officers out of the cockpit, and even rescinded employment offers. Other small airlines took seats out of their airplanes to be able to continue with



the employees they had. Within a year of full implementation of the rule (2013-14), most regional airline executives in the U.S. were screaming that they had to cancel routes because there were no qualified crews to fly the airplanes.

Cost vs. Benefits and the Anatomy of a Shortage

Meanwhile, regional airline pilots were pointing out to anyone who would listen that the real reason that regional airlines had no one to hire had little to do with finding qualified pilots and everything to do with finding pilots holding ATP certificates who were willing



to work for peanuts. Regional airline pay scales were notoriously low, with some new first officers pulling down less than \$20,000 a year. The pilots wanted pay scales revolutionized. “If you pay them, they will come,” became their mantra.

It was a valid and compelling argument. At that point corporate pilots holding ATPs were not abandoning their cockpits to become airline pilots. Why? Most of them made more money than what the regional airlines were offering (some corporate captains made as much as major airline captains, with similar work rules).

The largest regional-airline holding company, Republic Airlines, went bankrupt—or if you prefer—restructured itself (it was profitable at the time). In the third quarter of 2015 the company lost 60 pilots per month while hiring 20. The word was out. “Airline pilot” acquired the kind of stigma that plagues “family physician” as a career: costs a lot to train and the amortization tables for recouping that expense are long. That’s a lot of sacrifice asked, even if the “office” has stupendous views.

The education payback cost was particularly painful for those pilots who went into debt to finance their training. Cost estimates for ab initio to first officer position vary from a low of \$50,000 (€40,500) to upwards of \$150,000 (€122,000) depending on the type and intensity of training. The Part 61 flight school is not always the least expensive program, given that students tracing this training path must acquire 1,500 flight hours of experience separated into various buckets before applying for an ATP program, which itself can cost more than \$20,000 (€16,300).

“Cost is a very hard obstacle,” said Robin Glover Faure, acting president of L3 CTS, a large multinational flight-training conglomerate that entered the primary flight training business by purchasing several large flight schools in Europe, New Zealand, and the U.S. in recent years. “I believe the airlines will fund this training only when there is no other route. Until that happens, self-funding of flight training is reality.”

Sleeping Giants Awaken

While regulation and low pay issues stifled pilot population growth in the U.S., the more than one billion people in China and another billion in India woke up to the concept of air travel and began to embrace it. Airlines popped up seemingly overnight, business jet charter companies leased aircraft for thousands of nouveau riche, and they all needed staffing. A senior official at the Civil Aviation Administration of China (CAAC) told **AIN** last year that China needs more pilots every month. Studies show that in the next five years the carriers there alone need 2,800 to 3,000 pilots per year. There are only 12 flying schools across China pumping out 1,500 to 1,650 new pilots a year, so, at best guess,



New Pilots by Region 2016-2036



World Demand: 637,000

Source: Boeing

more than two-thirds of Chinese airlines send their cadet pilots to Europe, Australia, New Zealand, or the U.S. for training.

This shortage has been acute for a decade now. To address it in early 2007 the airlines petitioned the Chinese government and received permission to hire foreign pilots. Since then, some carriers have enticed expatriate pilots worldwide by offering high salaries and generous benefits. Still, the Chinese airlines struggle to keep cockpits staffed.

The airlines of India and Malaysia would also prefer to staff their cockpits with native pilots, and have embraced academy-style flight training within the countries to fulfill those needs, but for the time being, they too are hiring expatriate senior pilots on contract while homegrown pilots come online.

Addressing the Issue: Today's Training for International Jet Pilots

Students who are training in airline academy programs following EASA or ICAO prescriptions for about a decade now can opt for a multi-crew or multi-pilot certification (MCC or MPL, depending on the jurisdiction). This training follows a significantly different path from those plying the route to a traditional ATP.



These students are tracked from day one into sophisticated flight training devices and high-level simulators modeled on the Airbus 320 or Boeing 737. They learn how to fly those aircraft as part of a crew, and never get a single-engine airplane rating or even an instrument rating. At the end of their training, after just 250 hours or so, each is required to fly an actual airplane to a landing (similar to requirements for an ATP jet type rating), but once that has been demonstrated successfully to an examiner, they are considered ready to fly as first officer by a growing number of international airlines that accept the MCC/MPL certificate.

Like who? Flybe, Ryanair, and a plethora of Asian airlines are hiring pilots that possess the MCC/MPL certificate.

“Our best estimates are that today, there are 1,000 MPL certified pilots,” said Leontidis. “Air Asia now has captains who have risen through this program,” he told **AIN**, explaining, “We think there is a lot of merit to these programs. Airlines are telling us that they find less need for line conversion training and remedial training with MPL pilots.”

The MCC/MPL is efficient at teaching exactly the skills the airline wants taught, without cluttering a trainee’s brain with information about airplanes he won’t fly; and it is the quicker route to the right seat. Leontidis said that most of CAE’s more than 1,000 ab intio academy pilot graduates around the world are both recruited and funded by airlines.

On the other hand, L3 CTS, which branched into ab intio training when it purchased CTS in the UK and Aerosim in the U.S. in 2016, told **AIN** that most of its students are self-funded.

“EasyJet might identify 75 of our academy trainees in the UK who it feels are suitable for its flight deck,” explained Faure. “The company will give those pilots a letter of intent, but the candidates have to self-fund and get through the course successfully. Then they have a high likelihood that EasyJet will hire them.”

Faure believes that the cost of training is holding the industry back today. “Once you extend funding opportunities to anyone you open up being a pilot to a wider population, meaning you get much higher quality pilot candidates,” he said.

Back in the USA the Game Is Changing

For the foreseeable future in the U.S., it will take at least proof of qualifications for an ATP certificate to get you flying in the left seat of a corporate jet or the right seat of a Part 121 airline. Any pilot training program that has aligned itself with one of several regional airline pre-hire/tuition reimbursement programs is currently busting at the seams with trainees. Equipment is being acquired and upgraded (most with modern digital instrumentation).



ATP Flight School, for example, responded to the uptick in demand for pilots by updating and increasing its fleet of aircraft to 170 Piper singles and twins and some Cessnas at 40 locations around the U.S.

“We graduate 60 pilots a month from our Airline Career Pilot program,” said Danielle Calnin, ATP director of airline business development. ATP focuses primarily on the domestic pilot market, with only 2 percent of its 1,000-plus students hailing from outside the U.S. After graduating from the school’s Airline Career Pilot program, pilots receive a guaranteed CFI job at an ATP school, where they can earn as much as \$42,000 annually (this includes airline tuition reimbursement). “When pilots have between 300 and 500 hours’ total time, they interview with an airline participating in tuition reimbursement. If the airline makes an offer of employment, and the pilot accepts, the airline will begin



making a financial contribution toward the pilot's monthly loan payments. Once pilots meet the Airline Transport Pilot hiring minimums, they begin working for the airline. Pilots at ATP train from zero flight time to airline new-hire in as little as 27 months, Calnin told **AIN**. The school offers full financing for students through Sallie Mae and Wells Fargo. "The lenders recognize that these applicants are able to consistently gain successful airline employment through ATP and fulfill their loan obligations," she said.

Some companies, such as Hillsboro Aero Academy in Hillsboro, Oregon, and Embry-Riddle are updating their piston trainers with diesel-driven (and less expensive jet-A consuming) versions. Other longstanding ab initio programs are expanding their flight simulation offerings with Redbird, Frasca, and other ground trainers and upgrading their fleets, but they too are under pressure to staff up with instructors. Every one of them told **AIN** they are aggressively hiring CFIs and complained that those they do hire often don't stick around for long.

"We are absorbing large groups of incoming students each month who are finding us without advertising," said Jon Hay, president and CEO of 38-year-old Hillsboro Aero Academy in Oregon. "Our challenges are finding enough CFIs, housing students, and upgrading our facilities and fleet. About a year ago we started offering salaried positions with benefits such as health insurance for instructors."

John Bingham, president of Phoenix East Aviation (PEA) addressed the problem by becoming a specialist at obtaining F-visas for his foreign students so that they can stay on and work as CFIs for PEA as part of their time-building regime.

And as for the attractiveness of that first airline job, it was a good thing the regional airline pilots kept squawking. Eventually the market heard. "Starting wages are up more than double in the last three years at the regional airlines," Bingham told **AIN**. "Our guys now join commuter airlines with salary and bonus packages totaling as much as \$59,000 per year."

Tuition assistance during training in the U.S. may become the norm, as well. While very few major airlines are onboard (JetBlue being one of them), several large regional carriers with flow-through agreements to major U.S. airlines, including Horizon, Skywest, and PSA Airlines, have developed programs for reimbursing trainee pilots who commit to a work contract with them. Incoming pilot classes at the airlines are beginning to fill with pre-qualified candidates as a result.

What does that mean for business aviation? For the moment supply and demand are balanced, but now that the airlines are upping the ante? Only time and the rising tide will tell. ■



If Not Now, When? Aviation Industry Forecast for Pilots

Boeing says we need nearly 250,000 more professional pilots just to fill airline cockpits by 2036. Flight training giant CAE's first-ever forecast at last summer's Paris Air Show concurs.

Yet the U.S. Bureau of Labor Statistics (BLS) currently shows the need for pilots in the U.S. growing by only 4 percent by 2026. David Ison, president of the University Aviation Association (UAA), chuckled upon hearing that. "I think there is an important distinction between replacing pilots and growth. North America is not the large growth area for pilots or for airlines. That major growth is outside the U.S.," he explained. "We are, however, seeing a replacement pilot shortage now in the U.S."

Nick Leontidis, CAE group president for civil aviation training solutions, told **AIN**, "Boeing and Airbus project delivering 1,600 aircraft a year, and most of those are supporting growth in the industry. Large portions of these aircraft are going to economically emerging countries. The U.S. has constraints: JetBlue's Gateway program, for instance, has a minimum three-year training cycle to get someone in the right seat from the day they decide to hire them."

UAA's Ison said that one major issue with university flight training (programs that are aligned with some early-hire and tuition reimbursement plans in place at various airlines) is staffing flight instructors. "The big topic of discussion at UAA is CFI retention. We can't keep them long enough and can't fill the slots they leave behind. Embry-Riddle, where I work, is immersed in aviation, and I don't think it pulled back much during the downturn, but even it is having trouble keeping up with today's demand for flight training."

Jon Hay, CEO of Hillsboro Aero Academy, pointed out that the regional airlines' desire to abolish or lower the 1,500-hour rule would exacerbate the CFI problem. "Lowering that number lowers the experience of those who are doing the training—and a few years down the line, safety will be compromised. CFIs become very valuable in the 800- to 1,200-hour range because they have great experience by then, and we need them at that point training our next group up," Hay told **AIN**. Everyone interviewed for this story praised those U.S. airlines that sponsor some sort of training, including SkyWest, Horizon, PSA Airlines, and JetBlue, among others.

John Bingham, CEO and president of Phoenix East Aviation, a 45-year-old flight school that has seen double-digit growth in its student population over the course of just one year, said, "I think we are in the Rip Van Winkle awaking from his sleep phase in what is a cyclical industry. We are beginning to pull new students in because of the demand for pilots alone. Our job is helping them accomplish their dream, because being a professional pilot is a great career."

A.L.

Professional Aviators Are a Diverse Lot

Here's a contrarian view: I maintain that on a worldwide basis we do not have a diversity problem in aviation. In the roughly 100 years that we've been flying for hire, there have been male, female, and transgender pilots; pilots of European descent; pilots of African descent; Indian pilots; Asian pilots; and pretty much everyone in between. The problem has been that in North America and Europe, the pilots you mostly see on an airline flight deck are male and generally of European ancestry.

Robin Glover Faure, acting president of L3 CTS, said, "To meet growth goals we have to look at a way to appeal to a more diverse and broader group of people to convince them to become pilots." According to Faure, women pilots make up just 6 to 7 percent of pilots in the UK. "Our goal would be to see that at 20 to 30 percent and on to ideally 50 percent one day," he continued.

Data from FAA and EASA indicate gender issues are beginning to resolve. The number of women earning their ATP and MCC/MPL certificates has doubled in recent years, and FAA statistics for female student and commercial pilots shows ripples of change coming. It helps that airlines such as Ryanair in Europe and corporate jet charter companies such as Desert Jet, PlaneSense, and XOJet, among others, are being proactive about using mass media to encourage women and minorities within North America and Europe to become professional pilots. Organizations such as NBAA, AOPA, WCA, EAA, WAI, and IAWA all actively promote pilot careers to young girls, their parents, and to women all over the world through outreach events and organizational chapters. That's what it will take to recruit the next round of professional pilots to the industry. **A.L.**