LOSING ITS Luster

Experts say the US needs to rethink pilot training in aftermath of last year's Q400 accident

By Aaron Karp

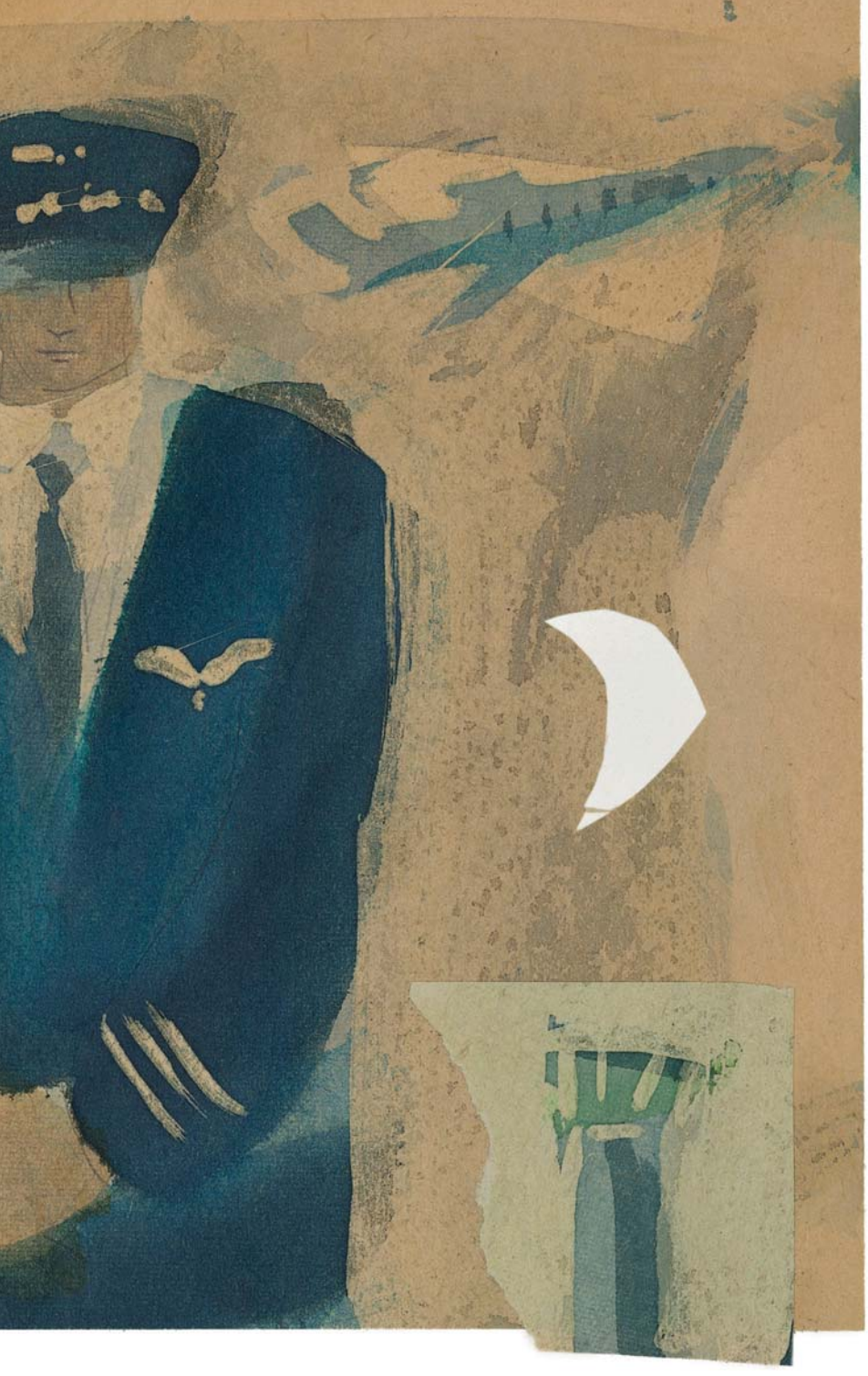
AS THE US GOVERNMENT CONSIDERS ADOPTING NEW pilot certification regulations in the aftermath of last year's tragic Colgan Air Q400 crash that was blamed on pilot error, professionals involved in training future first officers and captains are asking a deeper question: Why would someone want to become an airline pilot in the US in 2010?

Navigating an intensive flight training program or attending a university with a professional pilot curriculum often means spending/accumulating debt of well over $50,000. "The military is not the presence it used to be" in producing commercial pilots, Embry-Riddle University Aeronautical Science Dept. Chair Dan Macchiarella tells *ATW*. He estimates that 55% of new commercial pilots come from four-year college programs while civilian flight schools produce most of the rest.

There are the old romantic notions associated with piloting a commercial jet through the great blue yonder, and flight deck crew at major US airlines are generally well compensated. Even as financially strapped US carriers have won concessions from pilot unions, the Air Line Pilots Assn. says the average ALPA captain at a US legacy airline is 52 and earns about $155,000 annually after 21 years of service while an average first officer is 45 with 12 years of service and makes about $105,000.

But US legacy passenger airlines haven't hired pilots in about a decade; American Airlines, for example, employs more pilots over the age of 60 than under 40. So an aspiring pilot in America today must decide to invest the time and money with the hope that, someday, airline hiring will begin again, or seek employment with fringe players or freight/express operators. But even UPS Airlines, one of the most lucrative cargo carriers, has warned that it may be forced to furlough about 300 pilots this year.

"The process [of becoming a commercial airline pilot] is somewhat of a real gauntlet," Jeppesen Senior Manger-Training Solutions David Wright tells this magazine. "To learn to fly, you've



got to have the time, you've got to have the money and you've got to have the motivation." Once a young pilot has completed training successfully, he or she then must look to regional airlines, which now operate more than 50% of US domestic flights, for a job (see related article, p. 34).

"You're looking at low pay and a lifestyle dictated by that pay level," Wright says. But as with many professions, airline pilots pay their dues and then get a big payoff down the line, right? Maybe in the past, but any pilot who has entered the profession in the US in the last decade may wonder whether the dues-paying will be worth it. "This industry is becoming known for rabidly eating its young," he laments. "The promise of a sustainable, smooth career is probably at its lowest ever in the pilot profession." According to ALPA, an average first officer at a US regional with one year of service earns only around $20,567. A ten-year regional captain can expect to earn $70,000.

Even new pilots who graduate from four-year universities with highly regarded training curricula can't expect well-paying jobs. "There's a lot of difficulty in moving from being a poor college student to being a poor regional airline pilot," Macchiarella says.

University of North Dakota School of Aerospace Sciences Chair Kent Lovelace tells *ATW,* "I just had a student [pilot] in my office yesterday and I asked him what he wanted to do after graduation. And he said, 'I'm not going to the airlines.' He explained that he had a good friend who graduated [a couple of years] earlier, who's at such-and-such regional airline and actually seeing job regression while earning $24,000 a year. Well, you can't pay back your loans, can't cover your debt at that salary."

He continues, "There's a growing sentiment that the payoff just isn't there. When a [prospective pilot] asks 'Can I afford this?' the answer more and more is 'No.' . . . Those that want to fly professionally increasingly want to do so in a corporate setting or a general aviation setting. The image of the airline pilot is injured. It's not looked upon like it used to be at all."

Pilot Error The image was not helped by the conclusions reached by the US National Transportation Safety Board in its investigation of the Colgan crash outside Buffalo that killed 50. The board identified pilot error as the cause, citing the captain's inappropriate response to a stall warning. Colgan maintained that both pilots received thorough training in handling a stall situation and that it "cannot speculate on why they did not use their training" the night of the crash.

An issue that received a great deal of attention during Congressional hearings that followed the crash was whether the certification requirements for Part 121 first officers are sufficient. FAA's Advance Notice of Proposed Rulemaking on pilot certification requirements issued earlier this year noted that the Colgan crash "focused attention on whether a commercially rated copilot in Part 121 operations receives adequate training."

Among questions raised in the ANPRM was whether all Part 121 pilots should hold an Airline Transport Pilot certificate, which requires that a pilot be at least 23 years old, pass a test demonstrating knowledge of the aircraft category and class he or she will be operating and have accumulated a min-

imum of 1,500 flight hr. First officers currently must have only an instrument rating and commercial pilot certificate requiring just 250 hr.

The 24-year-old first officer in the doomed Q400 had a commercial pilot certificate but not an ATP. According to NTSB, she was hired by Colgan in January 2008 with 1,470 total flight hr. but only "6 hours of actual instrument training . . . The first officer reported no experience with turbine-powered airplanes on her resume and employment application." By the time of the crash, she had accumulated 2,244 hr. of total flying time, including 774 hr. in turbine aircraft and on the Q400. She reportedly was earning $22,000 per year and lived with her parents in Washington State to save money, commuting across the country to her crew base in Newark.

Both the House of Representatives and Senate have passed legislation that would require all Part 121 pilots to possess an ATP license, meaning it is very possible it will soon be mandated by law that even a regional airline FO will have to possess one.

'Archaic Regulations' ALPA Human Factors and Training Group Chair Chuck Hogeman notes that US regulations governing pilot certification were developed in a completely different era. "We would like to see some changes in the regulations because we don't believe the regulations have kept pace," he tells *ATW*. "They were crafted when we had an ample supply of pilots and [airlines generally were operating] three-pilot airplanes. You were able to move rather gradually [as an up-and-coming pilot] before taking control of an airplane."

It is also the case that the regulations were devised when the vast majority of US commercial pilots were former military pilots who joined airlines with thorough flight training that had been paid for by the armed forces. "Back in the '60s and '70s, you probably had 80% of the [airline] pilots coming from the military," Lovelace says. "By the late 1980s, that had turned around completely." Now former military pilots are believed to comprise no more than 10%-15% of the US airline pilot workforce.

A UND study of hiring practices at the six largest US regional carriers from 2005-2009 found that only 3% of new hires came from the military. "The military a few years ago really started to up the bonuses [for pilots to remain in the services] as well as upping the initial commitments required," Lovelace notes. "Pay levels [for military pilots] have increased whereas airline pay has not gone up for years."

Speaking at the FAA Aviation Forecast Conference in March, Allied Pilots Assn. Government Affairs Chairman Robert Coffman remembered that when he was hired by American Airlines in the 1970s, "for a couple of years we sat sideways [as a flight engineer in a jump seat] and watched how a captain and first officer operated an aircraft." This allowed pilots to serve a de facto "apprenticeship" in a cockpit during all types of situations before becoming a first officer, he said.

But the three-man cockpit began disappearing with the introduction of the DC-9 in the late 1960s as increased automation supplanted the role of the flight engineer, although not without controversy. Today's new pilots generally start as FOs with regional carriers. An ALPA white paper issued last year stated, "Today's archaic regulations allow airlines to hire low-experience pilots into the right seat of high-speed, complex, swept-wing jet aircraft in what amounts to on-the-job training with paying passengers on board . . . Not surprisingly, these pilots, who perform as well as their experience, knowledge and skills will permit, often exhibit deficiencies . . . [that] ultimately impact safety."

Coffman commented that many first officers hired by regionals "haven't been flying an aircraft long enough to do something to scare yourself." He said requiring that all commercial airline pilots have an ATP would force them to gain valuable "seasoning" before getting access to a cockpit with passengers' lives at stake.

Hogeman says the "$64 million question" in the debate over pilot certification is how much weight to give flight time. Measuring a pilot's proficiency by the hours he or she has accumulated in a cockpit is "a feeble system at best," he states. Wright says the notion that accumulating flying time makes someone a better pilot is a myth. "Statistically, there is no direct correlation between flight time and skills. How was a cadet trained, where did he get his experience? That's much more important."

Quantity vs. Quality In fact, throughout much of the world accumulation of significant flight time is not considered

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an essential element of preparing a pilot for commercial service, with no apparent effect on safety. Lacking the stream of highly experienced military pilots once common in the US, major carriers in other parts of the world long have operated ab initio programs that emphasize quality rather than quantity of training. Indeed, the ICAO Multi-Crew Pilot License standard, which calls for just 240 hr. of flying time, is premised on the notion that the quality of training is far more important than the number of hours accumulated *(ATW,* March 2008, p. 44). The US "hasn't embraced" MPL training, Macchiarella says.

Airlines conducting ab initio training, Emirates and Lufthansa prominently among them, carefully screen candidates with no flying experience whatsoever. Those who make the cut are put through training that is mostly or entirely paid for by the airline. Often, the result is pilots ascending to the right seat of a commercial jet with around 250-300 hr. of flight time.

"Emirates selects college graduates who want to be a pilot and takes them from zero training all the way through," Wright explains. "That model of training is gaining a lot of traction." The ab initio programs "fly in the face" of the notion that hours are what counts, he says. Emirates said 35 pilots graduated from its National Cadet Pilot Program last year. It spends AED1.2 million ($326,710) on each graduating pilot. Over the last five years it has spent a total of AED100 million ($27.2 million) on the program.

Based on recent testimony before Congress by FAA Administrator Randy Babbitt, himself a former airline pilot, it is not certain the agency will issue a certification rule that places a primary emphasis on flying hr.—though Congress could dictate that it set an hr. requirement. "I know some people are suggesting that simply increasing the minimum number of hours required for a pilot to fly in commercial aviation is appropriate," Babbitt told lawmakers. "I do not believe that simply raising quantity . . . without regard to the quality and nature of that time and experience is an appropriate method by which to improve a pilot's proficiency in commercial operations."

He said FAA is leaning toward developing a regulation that is more "targeted," explaining, "A newly certificated commercial pilot might be limited to certain activities until he or she could accumulate the type of experience deemed potentially necessary to serve as a first officer for an air carrier. There is a difference between knowing a pilot has been exposed to all critical situations during training versus assuming that simply flying more hours automatically provides that exposure."

He pointed out that in the US military it is possible for pilots with fewer than 200 hr. of flight time to be landing planes "on an aircraft carrier." What matters for the military is not hours flown but a rigorous training program that exposes future fighter pilots to all types of scenarios, he said.

"An ATP does not require an extensive amount of training," Lovelace says. "It's based on hours in the logbook. It doesn't cover a lot of varied topics or skill sets." He notes that the captain in the Colgan accident had an ATP (he had more than 3,300 hr. of total flying time) but was found by NTSB to have made a number of key mistakes on the night of the crash and to have had five "unsatisfactory" check rides throughout his career.

Higher Standards Pilot education "should be based on competencies as opposed to hours," Macchiarella agrees. He adds, "We believe that hours and competencies are not necessarily correlated. Studies show sufficiently higher success rates for [pilot] students that graduate with a full college education." He likens the current debate over pilot training to questions surrounding medical doctors' qualifications in early 20th century North America that led to the 1910 publication of the influential *Flexner Report*, which exposed wide variations in the quality of medical schools and a lack of uniform standards for becoming a doctor.

Medical doctors in the US and Canada became much more professionalized in the aftermath of the *Flexner Report,* he notes, adding that prospective pilots should have to "pass a set of boards" demonstrating they have proficiencies "equivalent" to those graduating with degrees from universities such as Embry-Riddle that require graduates "to demonstrate competencies in multiple areas . . . The pilot profession is under scrutiny now and we need to become more professional."

One undeniable consequence of the new standards ushered in by the *Flexner Report* was that it became far more expensive and time-consuming to become a doctor, narrowing the field of prospective physicians. Lovelace led a comprehensive UND study that found US airlines could face a serious pilot shortfall in the years ahead as older pilots retire, traffic finally starts to grow again and the number of young people willing and able to become airline pilots diminishes.

The US airline industry "is living in the past," he says. "The days of having an unlimited supply of young people having an interest in becoming a professional pilot with an airline are coming to an end." Initially there will be a "pent-up supply" of new pilots coming from regionals when US majors start hiring again, "but they'll pass through that quickly and will find that there aren't enough qualified people coming up to serve the industry's needs. Most people in the industry won't believe that could happen because it hasn't happened before. It may come down to being forced to provide sponsorship for [training pilots] or finding a way to help pilots pay off their debt. The truth is that most airlines aren't concerned about it because they've never had to be concerned about it before." ATW