# 14 When profit seeking trumps safety

## The risks and opportunities of liminality in commercial aviation in post-9/11 America

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This chapter contributes to an understanding of the socioanalytic aspects of finance in contemporary society by examining the complicated interrelatedness of money and safety within the US commercial aviation industry. Its thesis is that the airline industry's fixation on financial bottom lines and increasing profit has diminished safety priorities, causing a shift in pilot demographics from a stable, high-skilled, homogeneous work group to a less experienced, undisciplined, liminal group. This shift has led airlines to rely increasingly on individuals' professionalism and personal discipline to ensure safe flight operations, compensating for containment shortfalls in the system. Yet a series of accidents provides evidence that aviation industry leaders' lack of attention to this demographic shift and failure to contain the emerging liminal state has contributed to the development of a perverse culture, with troubling ramifications for air safety.



### Finance

While many commercial airlines would like the public to believe that the terrorist attacks of 11 September 2001 caused the post-9/11 downturn, informed insiders considered the aviation industry overdue for an adjustment. The events of 11 September simply provided the struggling airline industry with a popularly accepted excuse to downsize, while eliciting sympathy as one of the most visible images of America's struggle against terrorism. As if through a clever magic trick, industry leaders distracted the public by blaming the slump on terrorists, war, SARS (severe acute respiratory syndrome), economic recession, greedy employees, aggressive labor groups and frugal consumers while airline executives, bankruptcy lawyers and economic consultants made millions of dollars.

Take United Airlines, for example. At one point the world's largest international air carrier, United spent nearly three years in bankruptcy protection, a luxury not available to its international competitors. When it emerged from bankruptcy in 2006, executives dealt 400 managers in for 10 million shares, or 8 percent of the total company, worth an estimated $115 million on top of their annual salaries. Meanwhile, CEO Glenn F. Tilton received a $600,000 salary in addition to $4.5 million in benefits, over $15 million in stock options and

restricted shares, and a $3 million signing bonus – a total compensation package of $23.8 million for 2006 alone (Bailey 2007; Morgenson 2006: B1). All this while employees were furloughed (laid off), wage and benefits slashed, and consumers increasingly denied the most basic of flight amenities.

United spokesperson Jean Medina defended this compensation as 'appropriate to enable United to attract and retain top performers' whose compensation is 'tied to future performance of United's stock' (Morgenson 2006: B1). Others are not so convinced. Executive pay expert Brain Foley notes that 'players don't seem to discipline themselves as much as they should', 'external forces aren't executing any braking power', and bankruptcy 'courts don't seem to hold people as accountable as they should' (ibid.).

This laissez-faire approach by government regulators can be traced back to the US Airline Deregulation Act of 1978, signed by President Jimmy Carter in order to disband the Civil Aeronautics Board, allowing airlines to compete over routes, schedules and fares in a free market. Although a leaner, more competitive aviation industry emerged, the government nonetheless remained intimately involved. The post-9/11 bankruptcy filings of US Airways, Delta, Northwest and United Airlines are particularly emblematic of the industry's reliance on government interventions to stay solvent, even during this 'deregulated' period. Among the largest bankruptcies in US history, these private companies left taxpayers footing the bill for their managerial inefficiencies, with little regard for workers' interests. For instance, when legacy carriers United and US Airways emerged from bankruptcy, $9.7 billion was shifted to the government-backed Pension Benefit Guarantee Corporation, causing employees to lose a staggering $5.3 billion of the retirement benefits they earned. The pension plans of Delta and Northwest have been similarly underfunded by a combined $16.3 billion. If these airlines terminate their plans, employees will lose over $5 billion in earned benefits (US GAO 2005b).

Another managerial strategy to offset the impact of skyrocketing fuel prices, low-frill competitors' cheaper cost overhead, and post-bankruptcy airlines' leaner workforce was to consider merging. Although mergers are not unusual in US aviation industry history, so many air carriers considered merging in the post-9/11 period that Congress commissioned a study to review the process. Each merger offers unique advantages, but typically airlines cut costs through downsizing their fleet, furloughing employees and eliminating operational redundancies while increasing revenue by restructuring debt, renegotiating aircraft leases, and expanding networks to serve more city-pair markets, building customer loyalty.

Yet airline mergers are unsettling for employees, who routinely lose money, benefits, control over their schedules, sometimes even their jobs, with little time to prepare or adjust. And because pilot seniority establishes the order for promotion, aircraft assignment, work schedules and pay, disputes over the integration of seniority lists can be particularly contentious. US Airways' and America West's pilot unions, for example, have yet to agree on the terms of their seniority list integration requiring the companies, which merged over five years ago, to still run largely separate flight operations as labor unions battle it out in court.

## Safety

Many airlines' struggles to stay solvent in the post-9/11 period originated with decisions made during the initial phase of deregulation when intense competition and unfettered expansion required the extensive purchase of new airplanes and record hiring of employees at industry-leading pay rates. Between 1985 and 1988 alone, nearly 30,000 commercial pilots were hired in the United States. To contextualize this, consider the fact that there are only about 70,000 pilots currently employed in the commercial airline industry in America.

In 1989, *Future Aviation Professionals of America* estimated that US airlines would hire another 32,000 pilots by 2000, and the Federal Aviation Administration (FAA) estimated that airline fleets would increase by 25 percent, or nearly 4,200 additional commercial aircraft (*New York Times* 1987). This rapid aviation industry expansion exhausted the available labor supply and put younger, less experienced pilots eager to embark on a lucrative career path in the cockpit of nearly every air carrier. As Captain Vern Laursen, vice president of flight training at TWA, cautioned, by 1999 'every airline in the country will have 30-year-old captains' (Lavin 1989).

Contributing to the pilot shortage was the mandatory retirement of large numbers of experienced Vietnam-era pilots at age 60, competitive bonuses paid to keep military pilots in the service, and the high cost of civilian flight training. To overcome this pilot paucity, airport flight schools developed accelerated training programs while airlines simultaneously reduced previous standards for age, vision, height and weight, and flight experience. This meant that by the late 1980s a pilot with no college diploma or operational experience, a few months of ground training, and as little as 250 flight hours logged via flight instruction, sightseeing tours or banner tows in small single-engine airplanes could be at the controls of a complex commercial flight in challenging environmental conditions. Particularly disconcerting is how these inexperienced copilots not only represented a safety risk but placed an inordinate amount of pressure on the captain – who may not have had a great deal of experience either – to instruct and mentor while simultaneously performing his or her own duties. Yet it is all perfectly legal by FAA regulations.

The impact of these demographic changes became evident almost immediately.

### *Case 1: Continental Airlines Flight 1713, 1987*

In 1987, Continental Airlines Flight 1713 was delayed leaving Denver's Stapleton Airport by almost two hours, owing to snow, fog, freezing temperatures and reduced visibility. Once cleared, the airplane deiced and awaited takeoff clearance for nearly another half-hour as snow continued to fall. The takeoff roll was initially uneventful until the first officer, flying the aircraft, over-rotated on liftoff, stalling the jet, which impacted the runway and rolled inverted, killing 28 of the 82 occupants on board.

Both pilots were inexperienced in their crew positions and unaccustomed to their required duties during cold-weather operations. The 43-year-old captain had just 166 total hours in the DC-9, of which only 33 were as captain. The 26-year-old first officer had been hired by Continental Airlines just four months before the accident and had only 36 DC-9 flight hours. He was assigned the accident flight, only his second as a Continental copilot, because he had not flown in nearly a month and needed to gain proficiency.

Yet unbeknownst to the captain, the first officer had a documented history of poor performance and problems during training. A previous employer described him as 'tense and unable to cope with deviations from the routine'. At Continental, his flight instructor also voiced concerns: 'Completely lost control of the airplane'; 'Pitch control jerky'; 'Altitude control when pressure is on is somewhat sloppy'; and 'Airspeed control generally way out of limits'. All these refer to piloting deficiencies that became a factor during the accident flight (NTSB 1987: 10–11).

Predictably, the National Transportation Safety Board (NTSB) determined that the probable cause of the accident was 'pilot error'. Yet in its final report it included an unusual systemic indictment (NTSB 1987: 38):

> The rapid growth of the aviation industry at a time when fewer experienced pilots are in the workforce has reduced the opportunity for a pilot to accumulate experience before progressing to a position of greater responsibility. This loss of 'seasoning' has led to the assignment of pilots who may not be operationally mature to positions previously occupied by highly experienced pilots.

Although specific ways to address these deficiencies were not offered, the NTSB (1987) suggested that 'the time has come for the FAA to establish and the industry to accept' operational safeguards to compensate for this 'loss of seasoning'. Yet no such industry response was forthcoming. Why?



### *Case 2: GP Express Airlines Flight 861, 1992*

In 1992 a second fatal accident occurred involving unseasoned airline pilots new to their flight deck roles and over their heads in a challenging situation. GP Express Airlines Flight 861, a Beech C-99, hit the ground, killing three people, when the inexperienced crew lost situational awareness while maneuvering in clouds. It was the 29-year-old captain's first day as an airline pilot and his 24-year-old co-pilot's second month. Both had logged a large percentage of their flight experience in small single-engine airplanes with minimal actual instrument experience in clouds (NTSB 1993a).

One unusual company cost-saving strategy central in this accident was GP Express's policy to provide only one aeronautical approach chart to each crew. During this accident the chart was held by the first officer. As pressure built, the new captain became disoriented, overwhelmed and increasingly reliant on the

first officer's erroneous flight guidance. Yet without a chart for verification, the captain had no way to identify the copilot's mistakes or reorient himself.

Approximately three minutes prior to impact, the first officer joked sarcastically about the captain's obvious task saturation: 'Didn't realize that you're going to get this much on your first day did ya?' 'Well, it's all kind of ganged up here on me a little fast', the captain confessed (NTSB 1993a: 5).

Two minutes later, the captain discussed executing a 'missed approach' – akin to going around for another try. But the first officer persuaded him to continue landing. They crashed one minute later.

### *Case 3: Scenic Air Tours Flight 22, 1992*

A third fatal accident caused by organizational failures and a young pilot who lacked 'seasoning' involved a commercial sightseeing company in Hawaii in 1992. The 26-year-old captain had been employed by Scenic Air Tours for about eight months prior to the accident and took off in a 1957 Beech-18 on the 'Volcano Special' sightseeing tour. Although the flight was not certified for instrument conditions, the captain entered the clouds over Mount Haleakala and became disoriented, colliding with the rising terrain and killing all nine people on board (NTSB 1993b).

Particularly disturbing was the post-accident discovery that the young captain, eager to advance his commercial career, falsified his employment application, stating that he had accumulated 3,200 flight hours when in fact he only had about 1,600, well below Scenic Air Tours' 2,500 minimum. Over the previous four years he had worked for at least nine different aviation employers, five of whom dismissed him for causes such as 'below standard work', 'failure to report for duty', 'poor training performance' and 'misrepresentation of qualifications' (NTSB 1993b: 14). Yet this information was not made available to Scenic Air Tours.

In the ten years prior to this disaster, the NTSB investigated twelve sightseeing company accidents that resulted in ninety-six fatalities, of which six crashes were caused when, as in the case of the Scenic Air crash, a fully functioning aircraft was mistakenly flown into the ground. These commonalities prompted more questions about safety, training and oversight in the aviation industry – in particular, the FAA's failure to require that commercial operators conduct a substantive background screening of pilots before employment. In at least three accident investigations between 1987 and 1992, the NTSB urged the FAA to require aviation employers to screen pilots more thoroughly. Yet the FAA dismissed these recommendations, believing that the benefits of these requirements would not outweigh the cost of promulgating and enforcing the new regulations (NTSB 1993b: 39).

### *Case 4: GP Express Proficiency Checkflight, 1993*

A fourth fatal crash involving young pilots quickly working their way up the commercial aviation ranks occurred in 1993 on a dark Nebraska night. The

official purpose of this flight was for a company check airman, age 28, to administer an FAA proficiency check to another check airman, age 29, both captains at GP Express Airlines. Yet it emerged that the actual goal of the flight was a midnight opportunity for the two young pilots, known to be good friends who liked to joke around, to conduct unauthorized aerobatic maneuvers in their fifteen-seat turboprop (NTSB 1994).

The flight started with the accident pilot asking the check airman if he was 'up for a "vertical thing"' on takeoff as he radioed company ground personnel at the airport to 'look out the window' and watch (NTSB 1994: 12). Once airborne, they continued with other stunts, including a lethal aileron roll maneuver which, moments prior to ground impact, both pilots confessed never attempting before. Post-crash investigation revealed that the required FAA paperwork was already complete and in the company mailbox. Clearly, the pilots never intended to conduct a proper FAA check ride. Based on this evidence, the NTSB determined that both pilots violated company policies, FAA regulations and the tenants of prudent airmanship, and cited GP Express's failure to establish a safety culture committed to pilot professionalism (NTSB 1994).

### *Safety implications*

Evaluating the commonalities between these accidents reveals some compelling systemic similarities highlighting industry-wide problems with professionalism, pilot training, FAA oversight and the ways airlines screen and hire new employees, schedule inexperienced crews and measure competency in this new generation of pilots. Six of the seven accident pilots were less than 30 years old, had acquired experience flying small single-engine airplanes and were hired between 1987 and 1991, the rapid post-deregulation expansion period, with minimal flight time. Progressing quickly up the commercial ranks, more than half of these young pilots found themselves in the captain's seat within months of initial employment, just as TWA training Captain Laursen had cautioned against. Four of the accident pilots crashed within their first eight months of employment, one on his very first day as an airline pilot. And almost half had a documented history of serious performance problems with previous aviation employers which was never communicated to new employers. These examples of basic skill deficiencies, both technical and teamwork, become particularly alarming at the commercial pilot level because, as Captain Larry Rockliff, vice president of training at Airbus, observed, 'Once you're already in the profession' employed as a airline pilot 'and simply transferring or transitioning from one aircraft type to the next, it's very, very late to be teaching basic skills that were missed' (NTSB 2004: 239).

These aviation industry accident trends did not go unnoticed. Safety analysts predicted that even if accident rates remained constant, the anticipated 3–4 percent annual industry growth would result in a near-doubling of US air crashes by the turn of the twenty-first century. In global terms, this meant an airline crash every week worldwide by 2015 (Gore 1996). This information, among

other sobering insights, caused the FAA to slowly awaken to the daunting challenge it faced: how to enforce aviation safety during the rapid industry expansion caused by deregulation. It conceded that it was having difficulty keeping up: the average time to produce a new regulation, even one with urgent safety consequences, was three to four years. Motivated lobbyists often drove the rate of industry change through select projects. Important innovations were often undermined by overly conservative financial concerns. And safety changes, such as those recommended by NTSB accident reports, were often rejected simply because the odds of another mishap occurring was so remote it could not justify the costs.

Prompted by these concerns as well as the mysterious mid-air explosion of TWA Flight 800, the in-flight fire on board ValuJet Flight 592, and the corresponding 340 fatalities, President Bill Clinton created the White House Commission on Aviation Safety and Security led by Vice President Al Gore in 1996. The commission recommended a reengineering of the FAA's regulatory and certification programs with the goal of reducing aviation accidents by a 'factor of five within a decade'. Stuart Matthews, president of Flight Safety Foundation, succinctly noted that 'the FAA was simply never created to deal with the environment that has been produced by deregulation of the air transport industry' (Gore 1996: 1.1). Although that observation was made almost fifteen years ago, little has changed in the regulatory oversight of airline pilots, in large part because of cost (Fraher 2011). Even with all this evidence, finance continues to trump safety in commercial aviation.

These concerns attracted attention from labor unions as well. In 2009 the Air Line Pilots Association (ALPA), the world's largest pilots' union, released a white paper entitled *Producing a Professional Airline Pilot*, which discussed how the fallout from 9/11 significantly changed the business model at most major air carriers. This new approach encouraged companies to cut costs by parking larger airliners and furloughing more experienced, and therefore more expensive, employees – the 'seasoned' pilots the industry lacked – shifting over 50 percent of the nation's flying to commuter affiliates to save money. The strategy has proven to be especially profitable, increasing major airlines' virtual network while reducing overhead costs. A Delta 737-300, for instance, requires eighty-one passengers to break even but Delta's commuter partner Comair only requires twenty-one passengers on a regional jet on a similar route (US DOT 1998). And an average Delta pilot earns about $120,000 per year while a Comair pilot averages $36,000.

For years, strong unions like ALPA controlled this outsourcing through contract negotiations and the threat of job action. But after 9/11, with most contracts voided by bankruptcy judges, and labor unions in fear for their survival, airline management was free to negotiate anew, and regional airlines jumped at the chance to expand service, further fragmenting the industry.

***Case 5: Colgan Air, 2009***

Prioritizing short-term financial gains over other, long-term interests continues to come at a high cost. Consider Continental Connection Flight 3407, operated by Colgan Air, which crashed five miles from its destination in 2009, killing all forty-nine on board and one person on the ground. As in the previously discussed accidents, both the captain and the first officer had limited operational experience flying their complex aircraft in icing conditions, had trained in accelerated civilian flight programs logging a large percentage of flight time in small single-engine airplanes, and found themselves over their heads in a challenging situation made progressively worse by their own inexperience (NTSB 2009a).

On approach for landing in Buffalo, the captain, flying the aircraft in icing conditions, allowed the airplane's speed to become dangerously slow. This caused activation of a stall warning device called a 'stick shaker' which turned off the autopilot and vibrated the control yoke indicating impending stall, as designed. Although the airplane was in no imminent danger, the captain, concerned by the icing, startled by the warning and confused by the autopilot disconnection, panicked, slowing further and ultimately losing control of the aircraft. The NTSB (2009a) concluded that it was the captain's inappropriate nose-up inputs that caused the airplane's wing to stall, not the icing conditions. If he had responded properly, the airplane would have likely recovered sufficient airspeed and avoided ground impact (ibid.: 82).

The cockpit voice recorder revealed that both pilots were not properly monitoring the aircraft instruments, distracted instead by non-essential communications such as commuting, applying to major airlines, changing aircraft, upgrading and the copilot's annual gross salary of $15,800. This lack of situational awareness was compounded by fatigue as both pilots, yawning repeatedly throughout the flight, had apparently commuted to Newark the night before, sleeping in the flight crew lounge purportedly to save money (NTSB 2009a).

Although the 47-year-old captain had two years of captain experience and over 3,000 flight hours, he only had 109 flight hours in the accident aircraft. He was hired in 2005 with just 618 hours, 250 of which were accumulated in a pay-for-training program called Gulfstream Training Academy in Florida. Aspiring pilots enter the seven-month program with as little as 200 flight hours and no college degree, and for $32,000 students receive accelerated training as a regional airline copilot. After completion, most pilots, like the accident captain, have enough flight time to land an entry-level job at one of the many US commuter airlines. Yet questions remain about the quality of this preparation for the fast-paced, challenging environment that lies ahead for them.

For instance, the accident captain's training records showed that although he successfully completed the Gulfstream program, he had several documented areas of difficulty with aircraft control. And prior to attending the academy, he had failed three FAA check rides, and then later, at Colgan, his Airline Transport Pilot certificate – all requiring remedial training before he subsequently passed (NTSB 2009a: 10).

The 24-year-old copilot had been hired a year before the accident with about 1,600 flight hours accrued through two years of part-time flight instructing in Arizona. By her own admission, 'all of that [flight time] in Phoenix' was of little help preparing her for an airline career. 'I had more actual [instrument] time on my first day' at Colgan Air 'than I did in the sixteen hundred hours I had [before I was hired]', she joked on the day of the crash (NTSB 2009a: 291). Eager to make more money but clearly uneasy about her lack of operational experience, she shared, 'I really wouldn't mind going through a winter in the northeast before I have to upgrade to captain.' And in an eerie case of foreshadowing about five minutes before the crash, she shared, 'Back in Phoenix, if I'd "seen this much ice", I'd "thought oh my gosh, we were going to crash". I would have "freaked out' " (ibid.: 278). 'I've never seen icing conditions. I've never deiced … I've never experienced any of that' (ibid.: 291).

### *The FAA's 'call to action'*

The Colgan Air crash so shocked America that Congress convened a hearing and the FAA hosted twelve regional meetings investigating pilot training and qualifications, crew fatigue and safety standards. Four key areas emerged as needing improvement: (1) air carrier management responsibilities for crew education and support; (2) professional standards and flight discipline; (3) training standards and performance; and (4) mentoring relationships between mainline carriers and their regional partners (FAA 2010: 5). The report identified several concerns for airline managers such as 'the importance of a safety culture'; pilot scheduling and 'fatigue concerns'; the 'need to pay a "living wage" '; and 'the need for better screening of pilots' rather than ' "cookie-cutter" solutions solely based on flight time' (ibid.: 19).

Encouragingly, the FAA (2010: 22) noted that '[t]he single defining theme' which emerged after the Colgan Air accident 'was that a focus on quality, not just quantity' is essential. While total flight time measurement 'can be an indicator of a pilot's proficiency and suitability' for airline operations, 'quality of training and quality of experience are far more important in determining an individual's readiness to operate in the air carrier environment'. What seems to be universally recognized is that 'a generational "paradigm shift" in the pilot population' is occurring, involving 'a fundamental shift in experience, expectations, and work practices' which requires corresponding training and managerial changes. However, there is no consensus on what those changes should include. Yet the concept of liminality may help bring this complex situation into clearer view.

## Liminality: a useful descriptive concept

Liminality is a useful descriptive concept here because, rather than blaming individuals, liminality highlights the socioanalytic factors and resultant containment shortfalls of the system as a whole. Derived from the Latin word for threshold,

*limen*, the word 'liminal' was first applied by French anthropologist Arnold van Gennep to describe 'rites of passage', a term that denotes changes in 'place, state, social position and age', a transition period 'betwixt and between' different roles (Turner 1969: 94–5).

Several recent case studies have productively examined work performance through a lens of liminality and provide a way to comprehend the impact of this transitional state (Elmes and Barry 1999; Garsten 1999; Tempest *et al*. 2007). Two of these studies focused on the Mount Everest climbing disaster which killed eight people in 1996. Until fairly recently, Mount Everest remained the preserve of the world's most elite mountaineers, who passed death-defying rites of passage under apprenticeship to senior climbers on smaller mountains in order to learn the culture, norms and rules of their profession. Then, in 1985, a wealthy businessman named Dick Bass forever changed the field by climbing the highest peak on each continent, suggesting, 'anyone can climb if they have enough money and training' (Elmes and Barry 1999: 168).

Over the next decade, large numbers of commercial climbing companies emerged, charging clients upwards of $70,000 to ascend mountains like Everest. As a result, high-skilled experienced climbers with internalized norms and rules of their field with respect for the mountain and with Sherpas as partners gave way to liminal, less-skilled, undisciplined client-climbers with little knowledge of the field or respect for cultural norms and a higher potential for denial, rationalization, self-aggrandizement and entitlement (Elmes and Barry 1999: 179).

These changes had an impact on teamwork and the workload of team leaders in risky ways. Inexperienced, liminal mountaineers in ambiguous roles as both customer and climbing team member created particular management challenges. Driven by personal ambitions, inexperienced client-climbers had little desire to coalesce as a team, and could easily stretch beyond their personal competencies, with dire consequences for the entire group. These factors combined to cause 'a shift in the work-group cultures of high-altitude climbing teams, from more collaborative, high-learning, intentional group cultures to more regressive, low-learning, dependent group cultures' where competition for customers increased team leader pressure to get clients to the top (Elmes and Barry 1999: 165–6). In 1996 this dependency dynamic resulted in organizational overreach, team breakdown and death on top of Everest, evidencing that 'there are genuine limits to management practice in the contexts of liminality' (Tempest *et al*. 2007: 1040). This suggests that 'managers need to find ways to temper their drive to succeed with an awareness of and reflection upon the restrictions that businesses face in such settings' (ibid.).

There are parallels between the findings in the Mount Everest liminality studies and aviation culture today. Like mountaineers decades ago, previous generations of commercial pilots learned the culture, norms and rules of their field through years of apprenticeship under other pilots, usually in the military. As accelerated airport training academies emerged, new pilots now had the opportunity to 'pay for training', essentially buying a flight deck seat after only a few months without necessarily learning the important lessons for survival, just like

Everest client-climbers. In both cases a tacit industry assumption remains that although they often lack the background, education and operational experience of previous workgroups, these liminal workers are nonetheless savvy enough to know their limits and will not endanger others. Obviously, this is not always true.

Trapped 'betwixt and between', aspiring pilots are eager to land air carrier jobs, log airline flight time and upgrade to captain as soon as possible, in the hope of advancing their aviation careers. In fact, the need to earn a livable wage, often to pay back high-interest flight training loans, demands this transition. Yet eager but inexperienced pilots can easily find themselves over their heads in challenging situations without the requisite skill set to survive. Meanwhile, weak regulations, financial pressures, employee turnover and fragmented networks make commuter airlines, often the first rung of the civilian pilot's career ladder, the least able to provide the apprenticeship these fledgling airline pilots need. Airline managers' fixation on financial bottom lines and lack of attention to pilots' liminal state fostered a regressive culture that Tempest *et al*.'s (2007) liminality study cautioned against. The loss of containment once provided by corporate culture, strong labor unions, supportive management, clear contracts, fair work rules, established seniority lists and defined career paths that included significant operational experience has resulted in pilots' development of defenses to compensate for containment shortfalls. As Sir Edmund Hillary noted, mountaineering 'used to be a team effort. Nowadays, it's much too "everybody-for-himself". That can get you killed' (cited in Elmes and Barry 1999: 175). The same could be said for aviation.



### *Evidence of liminality in aviation today*

The lack of containment in this liminal environment makes it particularly difficult for airline employees to concentrate on job performance at work. Take, for example, the Northwest Airline pilots who, out of radio contact for an hour, overflew their Minneapolis destination by 150 miles in October 2009 with 147 passengers on board. After investigating the incident, the NTSB reported, 'The crew stated they were in a heated discussion over airline policy and they lost situational awareness' (CNN 2009a).

That same week a Delta Air Lines crew also lost situational awareness when they landed their 767 with 194 passengers on a taxiway at their hub airport, Atlanta-Hartsfield International, instead of their assigned runway (CNN 2009b). Just months before these two incidents, Delta had acquired Northwest through merger, creating what one airline analyst called the 'tsunami of airline consolidations' (AP 2006).The deal nearly fell through when a standoff emerged between the 7,000 Delta and 5,000 Northwest pilots' unions, each wanting greater seniority for their labor group.

In another post-9/11 labor-related incident, United Airlines was forced to cancel a flight in 2008 when the captain announced to passengers that 'he was too upset to fly' after a dispute with another employee about wearing his hat.

The pilots' union had urged pilots to remove their hats in protest at a managerial decision setting aside yet another $130 million in stock in an executive incentive plan while cutting routes, parking planes and laying off employees. It was a sign 'to show management' that pilots were 'serious about regaining what was stripped' from employees 'during bankruptcy' (Yu 2008: 3B).

Even the 'hero' pilots who landed their crippled Airbus on the Hudson River in 2009, Captain 'Sully' Sullenberger and First Officer Jeff Skiles, found themselves pondering the impact of airline mergers on the morning of their fateful accident (NTSB 2009b).

'Wonder how the Northwest and Delta pilots "are getting on"', Skiles remarked as a Northwest jet taxied behind them during engine start.

'I wonder about that too', Captain Sullenberger responded, 'I have no idea … hopefully better than we and [America] West do.'

'Be hard to do worse.'

'Yeah … Well I hadn't heard much about it lately but I can't imagine it'd be any better', Sullenberger replied (NTSB 2009b: 22).

Although technically a violation of the FAA's sterile cockpit rules, these types of conversations are common on the flight deck of nearly every airline today as pilots struggle to cope with the drastic changes that have befallen their profession and the ensuing liminal state. Even once aggressive labor groups now shy away from confronting airline management, fearing repercussions. Take the Airline Mechanics Fraternal Association strike at Northwest Airlines in 2005 when 4,400 mechanics and aircraft cleaners walked off the job, angry about the company's demand for $176 million in wage and benefit concession and a 53 percent loss of jobs. In an unprecedented reaction pilots, flight attendants and other labor groups refused to strike in sympathy, afraid for their own jobs (Maynard 2005).

The chaotic state of the post-9/11 aviation industry generated such widespread concern in Congress that the Government Accountability Office (GAO) was tasked to investigate the implications of airline bankruptcies, mergers, loss of pension plans, high fuel prices and even re-regulating the struggling industry. One study claimed that 'the airline bankruptcy process is well developed and understood', even discussing the liquidation of employee pension plans and offering examples of the significant loss of benefits senior airline employees will experience when they retire. Yet it nonetheless claimed that there was 'no evidence' that bankruptcy 'harms the industry' (US GAO 2005b: 19, 27). Another report noted that '[t]he historically high number of airline bankruptcies and liquidations is a reflection of the industry's inherent instability' (US GAO 2005a: 20). However, it did not investigate the implications of this instability and lack of containment for employees. In fact, not one of the government's reports discussed the impact of this tumultuous liminal climate of outsourcing, mergers, downsizing, furloughs and changing work rules on teamwork, employee job performance or safety.

Yet Captain Sullenberger (2009) made the connection between airlines' fixation on the financial bottom line and its impact on employee performance and

safety while testifying to Congress. Voicing experienced pilots' concerns, he noted that aviation employees 'have been hit by an economic tsunami'. The 'terms of our employment have changed dramatically' and the managerial decisions placing 'less experienced and less skilled' pilots on flight decks today will have 'negative consequences to the flying public – and to our country'. As a result, 'I am worried that the airline piloting profession will not be able to continue to attract the best and the brightest', which is 'vital to safe air travel and our country's economy and security'. It is time for airlines to 'refocus their attention – and their resources – on the recruitment and retention of highly experienced and well-trained pilots', making that 'a priority that is at least equal to their financial bottom line'.

ALPA (2009: 1) was even more pointed in its criticism, observing that unless significant changes are made in 'today's archaic regulations', airlines will continue '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'.

## Concluding thoughts

It seems clear that as US airlines became increasingly fixated on maximizing profits in the post-9/11 period by outsourcing flying to regional carriers and furloughing experienced pilots, a shift occurred on America's flight decks from stable, high-skilled, homogeneous teams to less experienced, undisciplined, liminal groups, a change that directly resulted in at least one accident and the death of fifty people. With all this evidence, what remains curious is why airline executives, government regulators and the flying public persist in their apathy. To understand this disregard, Long's (2008: 68) model of 'perverse greed' provides insight.

Like so many other American corporations today, exploitative airline executives repeatedly obtained multimillion-dollar pay packages for themselves at the expense of the workers in their charge. To accomplish this, they engaged government agencies, labor unions, boards, stockholders and bankruptcy judges as accomplices, convincing them that their strategies were best for the long-term viability of their companies. Meanwhile, passengers' search for cheap tickets, made even easier by internet websites, allowed consumers to lock in the lowest price while turning a blind eye to the risks, assuming that government regulators would monitor aviation safety. Yet overburdened regulators, tasked with the conflicting mission to both promote aviation and regulate safety, exercised little control.

A systemic fantasy emerged in the post-9/11 period that airlines can be lucrative for executives, self-managing for regulators and risk-free for passengers with no impact on employees or safety. In a sense, greed linked executives, regulators and passengers in a fantasy of 'goodness' as they colluded to avoid seeing reality: the growing systemic risk created by their 'perverse greed' and its impact on pilots' liminal state. It was only after an accident like the Colgan Air one that anyone began to ask questions – too little, too late.

The concept of liminality, then, allows us to perceive how contemporary conditions in US commercial aviation have created a situation of both heightened risk and increased opportunity (Garsten 1999). The risks have been well documented in this chapter. As both Captain Sullenberger and the ALPA report have underscored, the time is ripe for a transformation of the system of aviation. Whether we take advantage of this opportunity to press for the necessary changes and reprioritize safety over finance remains to be seen.

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