

AVIATION SAFETY: ONE YEAR AFTER THE CRASH OF FLIGHT 3407

HEARING

BEFORE THE

SUBCOMMITTEE ON AVIATION OPERATIONS,
SAFETY, AND SECURITY

OF THE

COMMITTEE ON COMMERCE,
SCIENCE, AND TRANSPORTATION
UNITED STATES SENATE

ONE HUNDRED ELEVENTH CONGRESS

SECOND SESSION

FEBRUARY 25, 2010

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ONE HUNDRED ELEVENTH CONGRESS

SECOND SESSION

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THURSDAY, FEBRUARY 25, 2010

U.S. SENATE,
SUBCOMMITTEE ON AVIATION OPERATIONS, SAFETY, AND
SECURITY,
COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION,
Washington, DC.

The Subcommittee met, pursuant to notice, at 9:32 a.m. in room SR-253, Russell Senate Office Building, Hon. Byron L. Dorgan, Chairman of the Subcommittee, presiding.

OPENING STATEMENT OF HON. BYRON L. DORGAN, U.S. SENATOR FROM NORTH DAKOTA

Senator DORGAN. I'm going to call the hearing to order. My colleagues will be joining me shortly, but in the interest of starting on time, I want to begin the hearing.

This is a hearing on aviation safety of the Aviation Subcommittee of the Commerce Committee, one year after the crash of Flight 3407 of Colgan Air at Buffalo, New York.

I welcome our witnesses this morning. The witnesses will be Deborah Hersman, the Chairman of the National Transportation Safety Board; and Ms. Peggy Gilligan, the Associate Administrator for Aviation Safety at the FAA. We appreciate both of you coming.

I note that, this week, the National Transportation Safety Board released a 300—I believe, 300-plus-page report on the Colgan crash. We've just observed the 1-year anniversary, as I've indicated. That terrible tragic accident has crystallized, I think, a number of issues that are in front of us to try to deal with the issue of aviation safety. The issue of pilot training, rest, experience, a wide range of issues dealing with, in this case, regional carriers, but a number of these issues relate to all of the carriers.

It has become clear to me that Congress and the industry needs to take major steps to ensure that there is indeed one level of safety throughout the entire commercial aviation industry. We are told that that is the standard, and yet the evidence suggests that that is not the practice. I note that the newspaper reports of the National Transportation Safety Board investigation cites, quote, "pilot error," unquote. And yet, I know, from the reading that I have done and the evaluation I have done of information that's come across my desk, that there is much, much more to the rest of the story.

Pilot error. That would suggest that something happened in a moment in that cockpit that caused that accident. Well, we do know that something happened in that cockpit. A number of things

happened in that cockpit that were inappropriate responses to the conditions in which that airplane was flying. But, we also know that there were many other conditions leading up to that moment that cause us great concern and cause us to believe—some of us to believe that they were contributing factors to that accident.

And the question, for me, is, As we look at all these issues, what is being done to address them? Not only what is being done, but when is it being done? When can we expect the achievement of the goals that we establish to make certain this cannot and will not happen again? And the discussion that's been held between the FAA, the NTSB, the Congress, the families of the victims of Colgan Air, all of that, I think, has led to some real impatience about trying to make certain that this morning, at 10:36, there's not some airplane flying in weather, someplace around this country, in which the similar conditions would have led to similar mistakes that will cause us to lose the lives of other people who are on commercial airlines.

I have said, at every hearing, that we have a remarkably safe system in aviation. I mean, if you just take—and you measure that by how many airline crashes, how many crashes have we had in commercial aviation in recent years. It is a remarkably safe way to travel, and we don't want these hearings to suggest otherwise. But, these hearings are necessary, and the investigation of the Colgan accident, or crash, in Buffalo, New York, describes to me that this level of safety travels on a very thin edge.

What I have learned from this crash, and what we need to apply to other standards across the industry here, is that a number of things are occurring that can be causal to some future accident if we don't take action. I'm talking about fatigue, I'm talking about traveling all night across the country. I'm talking about training. I'm talking about the question of how the regional carriers carry the colors and the brand of the majors, and yet there's—the majors, in many cases, have no responsibility for much of anything of that regional carrier. All of these things are issues. The full and complete background of a pilot, that airlines don't have access to now, in most cases, when they hire a pilot. All of these things, in my judgment, are important, and we are required to address them all. Because, most surely, they will come together once again at some point and take the lives of others if we don't address these issues.

So, let me thank the witnesses for being here. I'm going to have a lot of questions today. I appreciate very much your willingness to appear this week at a time when the NTSB has issued its report.

Ms. Hersman, you have been with us before. And as I indicated, I wanted to start on time. We will have some colleagues join us, but I'm going to call on you for an opening statement, and then I will call on Ms. Gilligan, and then we will proceed from there.

**STATEMENT OF HON. DEBORAH A.P. HERSMAN, CHAIRMAN,
NATIONAL TRANSPORTATION SAFETY BOARD**

Ms. HERSMAN. Good morning, Chairman Dorgan.

On February 12, 2009, Colgan Air Bombardier Q-400, operating as Continental Connection Flight 3407, crashed while on approach

to Buffalo, New York. All 49 people on board, and one person on the ground, were killed.

I'd like to start by showing an animation of the last minutes of the accident flight. As you will see, the top half of the screen shows the 3-dimensional model of the airplane and its motion. Superimposed over the model is the cockpit voice recorder text. The time is shown in the middle of the screen, on the right side. The bottom half of the screen depicts a set of instruments and indicators.

Moving from left to right, the airspeed indicator is boxed in red during low speed with the low-speed cue in red next to the airspeed tape; altitude; stall protection system; stick pusher and stick shaker; an icon depicting the control wheel rotating right or left; and control column moving up and down. We will now play the animation of the accident sequence. The animation does not depict the weather or visibility conditions at the time of the accident.

[Pause.]

Ms. HERSMAN. You can see the low-speed cue is visible at this time, and the landing gear is up. The airspeed is about 170 knots. Flaps are at zero degrees. And the autopilot is engaged, with the altitude hold mode selected, at about 2,300 feet.

[Pause.]

Ms. HERSMAN. See the flap handles move from 0 to 5 degrees. The airplane is in level flight, and the control column is in neutral position. You can see the shadowing when it's not in neutral.

[Pause.]

Ms. HERSMAN. The engine power levers are moved to near flight-idle, and during the next 10 seconds the engine condition levers move, the airspeed starts to slow down, and the gear comes down.

Now the upset begins. You see the stick shaker's on. The airplane stalls. The pusher's activating. The gear comes up.

In May, the Safety Board held a 3-day public hearing to collect testimony on issues related to the accident, including aircraft performance, flight crew training and procedures, and fatigue management. On February 2, 2010, we met to consider the final report. Holding a hearing and completing this investigation in less than a year was quite a challenge and reflects the dedication of our staff.

One of our 46 findings indicated that, although the aircraft had some ice accumulation, it did not affect the crew's ability to control the airplane. We determined that the probable cause of the accident was the captain's inappropriate response to the activation of the stick shaker. Contributing factors included the flight crew's failure to monitor airspeed and adhere to sterile cockpit procedures, the captain's failure to effectively manage the flight, and Colgan's inadequate procedures for airspeed selection in icing conditions. We issued 25 recommendations addressing training, fatigue, previous flight test failures, records retention, expanding FOQA programs, and the use of portable electronic devices.

Before closing, I would like to highlight two related events that the Safety Board has planned for later this year. In May, we will be holding a public forum on pilot and air traffic controller professionalism; and in the fall, we will hold a symposium on code sharing and its role in aviation safety.

Thank you, and I'm pleased to answer your questions.

[The prepared statement of Ms. Hersman follows:]

PREPARED STATEMENT OF HON. DEBORAH A.P. HERSMAN, CHAIRMAN,
NATIONAL TRANSPORTATION SAFETY BOARD

Good morning. On February 12, 2009, about 22:17 eastern standard time, a Colgan Air, Inc., Bombardier DHC-8-400, N200WQ, operating as Continental Connection Flight 3407, was on an instrument approach to Buffalo-Niagara International Airport in Buffalo, New York, when it crashed into a residence in Clarence Center, New York, about 5 miles northeast of the airport. The 2 pilots, 2 flight attendants, and 45 passengers on board the airplane were killed, one person on the ground was killed, and the airplane was destroyed by impact forces and a post-crash fire.

Within minutes of the accident, the NTSB was notified, and a go-team was launched to the accident site early the next morning. The NTSB named 6 parties to the investigation, including:

- Federal Aviation Administration (FAA)
- Air Line Pilots Association
- National Air Traffic Controllers Association
- United Steelworkers Union (representing the flight attendants)
- Transportation Safety Board of Canada
- Air Accidents Investigation Branch of the United Kingdom

In addition to the parties, other organizations participated in the investigation—more than 60 in total—including Transport Canada, Bombardier, Pratt & Whitney Canada, Dowty Propellers, as well as representatives from state agencies, area-wide county and city offices, emergency responders, police departments, service organizations, and many others.

As part of its investigation, the NTSB held a 3-day public hearing in Washington, D.C., May 12 through 14, 2009. Witnesses included representatives of FAA, Colgan Air, the Air Line Pilots Association, and Bombardier. The issues presented and explored during the hearing were the effect of icing on airplane performance, cold weather operations, sterile cockpit rules, flight crew experience, fatigue management, and stall recovery training.

This tragic accident significantly changed countless lives. Many family members and friends of the victims of Flight 3407 have come together to tirelessly advocate for improved aviation safety. The NTSB made a commitment to the families some months ago that we would aggressively pursue the issues uncovered in the accident and endeavor to complete the investigation before the one-year anniversary. Holding a public hearing and then finalizing this investigation in less than a year was a challenge for the agency; the last time we accomplished both a hearing and completion of a major investigation in less than a year was more than 15 years ago. This effort required a significant amount of staff overtime and reprioritizing other investigative activities. Nevertheless, our dedicated staff presented a draft final accident report late last month, and in a public Board meeting on February 2, the Board voted unanimously to adopt the report, thus concluding this significant accident investigation.

The final report includes 46 separate findings and a determination that the probable cause of the accident was the captain's inappropriate response to the activation of the stick shaker, which led to an aerodynamic stall from which the airplane did not recover. Contributing to the accident were the: (1) flight crew's failure to monitor airspeed in relation to the rising position of the low-speed cue, (2) the flight crew's failure to adhere to sterile cockpit procedures, (3) the captain's failure to effectively manage the flight, and (4) Colgan Air's inadequate procedures for airspeed selection and management during approaches in icing conditions. The final report also makes 25 new recommendations to the FAA and reiterates 3 previously issued recommendations. The recommendations cover a wide range of safety issues that were factors in this accident, including pilot training and fatigue.

Pilot Training

Although the NTSB's investigation was broad-reaching, the performance of the pilots in this accident was the primary focus of the investigation. Not only was the captain's inappropriate response to the stick shaker identified as the primary cause of the accident, but several performance lapses on the part of the crew were cited as contributing factors to the accident. Therefore, the NTSB staff spent considerable time reviewing the pilots' performance on the night of the accident, documenting their activities in the days leading up to the crash, and scrutinizing their previous performance including detailed reviews of their past proficiency checks and the training they received while employed by Colgan Air.

Remedial Training

The captain of Flight 3407 had multiple certificate and rating failures which were a matter of record with the FAA. His training records at Gulfstream International Airlines showed that his flying skills needed improvement, although he met the minimum standards required for completion of the training. His continued demonstrated weaknesses in basic aircraft control and attitude instrument flying during annual checks at Colgan Air should have made the captain a candidate for remedial training. However, at the time of the accident, Colgan Air did not have a formal program for pilots who demonstrated ongoing weaknesses. Furthermore, Colgan Air's electronic pilot training records did not contain sufficient detail for the company or the FAA Principal Operations Inspector (POI) to properly analyze the captain's trend of unsatisfactory performance.

In 2005, the NTSB recommended that the FAA require all Part 121 air carrier operators to establish oversight and training programs for pilots who have demonstrated performance deficiencies or have experienced failures in the training environment (A-05-14). In response, the FAA issued SAFO 06015, "Remedial Training for Part 121 Pilots," the purpose of which was to promote voluntary implementation of remedial training for pilots with persistent performance deficiencies. While the FAA had recently conducted surveys to determine if carriers have remedial training programs consistent with the SAFO, the POI for Colgan Air stated during the NTSB's public hearing that he was not aware of the existence of this SAFO.

Remedial training and additional oversight for pilots with training deficiencies and failures would help ensure that the pilots have mastered the necessary skills for safe flight. In 2003, during our investigation of a landing accident involving a FedEx MD-10 in Memphis, the NTSB's review of FedEx's pilot training procedures and oversight revealed that, consistent with other operators in the aviation industry, it focused on a pilot's performance on the day of the checkride with little or no review of that pilot's performance on checkrides months or years earlier. The NTSB was concerned that this single-event focus does not allow a carrier to monitor changes or patterns in a pilot's performance history that could provide significant information about the competency of a pilot. For example, in the FedEx case, the first officer's repeated substandard performances on checkrides were addressed as singular events that did not require further evaluation or monitoring after the checkride was satisfactorily completed. Yet, post-accident review of the first officer's training history and post-accident interviews suggested a pattern of below-standard performance. In our report on Flight 3407, we reiterated our 2005 recommendation to the FAA (A-05-14) and issued several additional recommendations focused on pilot training.

The NTSB also reiterated our concern about reviewing all available pilot records for new hires. Following the 2003 Air Sunshine ditching accident near the Bahamas, which involved a pilot who had failed 9 FAA flight checks, the NTSB issued recommendations to address the importance of obtaining all pilot records prior to hiring. In addition to reiterating our 2005 recommendations (A-05-01), we issued 3 additional recommendations addressing the maintenance and sharing of pilot training records (A-10-17, A-10-19, and A-10-20).

Stall Training

As pilots transition to larger transport-category airplanes, they do not have an opportunity to experience stalls in flight or in a simulator, because air carrier training does not require pilots to practice recoveries from fully developed stalls. The FAA's practical test standards for pilot certification currently require pilots to recover from an "approach to stall" with minimal altitude loss. This recovery procedure can be effective as long as an airplane is not fully stalled. However, altitude loss standards are not appropriate for responding to a fully developed stall. Once a stall has occurred, an airplane cannot be recovered until the wing's angle of attack (AOA) is reduced, which will usually necessitate a loss of altitude.

The current air carrier approach-to-stall training did not fully prepare the crew for an unexpected stall in the Q400 and did not address the actions that are needed to recover from a fully developed stall. The stick shaker, which is a component of the stall warning system in the Q400, produces an audible vibration of the control yoke when it activates to alert the pilot to take immediate action. However, the existing industry practice of training to approach-to-stall does not prepare pilots for unexpected situations where the stick shaker activates and simultaneously disconnects the autopilot. The stick pusher response is another feature designed to prevent and/or recover from a stall by pushing the control yoke forward and achieving a nose down attitude. Stick pusher training was not consistently provided to pilots of Q400s, nor was it required by the FAA.

The NTSB has investigated other accidents in which the pilots applied inappropriate nose-up pitch control inputs during an attempted stall recovery, including West Caribbean Airways Flight 708 in 2005, Pinnacle Airlines Flight 3701 in 2004, and an Airborne Express DC-8 in 1996. We remain concerned that classroom training of this important system is incomplete because the training does not familiarize pilots with the forces associated with stick pusher activation or provide them with experience in learning the magnitude of the airplane's pitch response.

The NTSB believes that more realistic stall and upset training is possible due to advances in simulator technology. Flight crew training on full stalls and recoveries has not previously been included in simulator training partly because of industry concerns about the lack of simulator aerodynamic model fidelity in the post-stall flight regime. However, research demonstrates that simulator fidelity can be significantly improved and the useful data envelope for upset training can be expanded. Pilots could have a better understanding of an airplane's flight characteristics during the post-stall flight regime if realistic, fully developed stall models are incorporated into simulators that are approved for such training.

Colgan Air pilots were trained to address tailplane stalls through a NASA-produced video intended to enhance a pilot's ability to assess hazardous icing conditions. The tailplane stall recovery procedure discussed in the video required pilots to pull back on the control column, reduce flap setting, and for some aircraft, reduce power. However, the tailplane stall recovery procedure presented in the video was the opposite of the recovery procedure for a conventional wing stall, which requires lowering the nose and adding power. Many Colgan pilots believed the Q400 was susceptible to tailplane stalls, but according to Bombardier, the manufacturer, it was not. Training in tailplane stalls, when it is not appropriate for the aircraft for which the pilot is being trained, may add confusion to a pilot's reaction in addressing conventional wing stalls.

To address stall recovery and stick pusher training in simulators, NTSB recommended that the FAA:

- Require Parts 121, 135, and 91K operators and Part 141 pilot schools to develop and conduct training that incorporates stalls that are fully developed, are unexpected, involve autopilot disengagement, and include airplane-specific features, such as a ref speeds switch (A-10-22);
- Require Parts 121, 135, and 91K operators with stick pusher-equipped aircraft to provide their pilots with pusher familiarization simulator training (A-10-23);
- Define and codify minimum simulator model fidelity requirements to support expanded stall recovery training (A-10-24);
- Identify which airplanes operated under Parts 121, 135, and 91K are susceptible to tailplane stalls and then require operators of those airplanes to provide appropriate stall recovery training, and direct operators of airplanes that are not susceptible to tailplane stalls to ensure that their training does not include tailplane stall recovery.

Training for Active Monitoring

The flight crew of Flight 3407 failed to monitor the airplane's pitch attitude, power, and especially its airspeed, and they failed to notice, as part of their monitoring responsibilities, the rising low-speed cue on the indicated airspeed (IAS) display. There are multiple strategies to use to protect against catastrophic outcomes resulting from monitoring failures like this one, not the least of which is pilot training.

Current pilot training programs often do not address monitoring skills in a systematic manner. Some of Colgan Air's guidance to its pilots referenced the importance of monitoring, and the subject was discussed and evaluated during simulator training and initial operating experience. However, the company did not provide specific pilot training that emphasized the monitoring function. Further, the company's crew resource management (CRM) training did not explicitly address monitoring or provide pilots with techniques and training for improving their monitoring skills.

As a result of this accident investigation, the NTSB reiterated a recommendation that was issued in 2007. That recommendation called for the FAA to require that all pilot training programs be modified to contain modules that teach and emphasize monitoring skills and workload management and include opportunities to practice and demonstrate proficiency in these areas (A-07-13).

The crash of Flight 3407 and a subsequent event near Burlington, Vermont, revealed that Colgan Air's standard operating procedures did not promote effective monitoring behavior. The NTSB is concerned that other air carriers' standard operating procedures may also be deficient in this area. We therefore recommended that

the FAA require Part 121, 135, and 91K operators to review their standard operating procedures to verify that they are consistent with the flight crew monitoring techniques described in the FAA's advisory circular, AC 120-71A, and to revise the procedures if they are not (A-10-10).

Training Captains for Leadership

The captain of a flight is responsible for setting the appropriate tone in the cockpit and managing communications and workload in a manner that promotes adherence to standard operating procedures. The captain of Flight 3407 did not establish a professional environment in the cockpit when he performed checklists and callouts late, initiated and encouraged non-pertinent conversation in flight, and failed to effectively manage the workload in the cockpit or communicate with the first officer during an emergency situation.

Industry changes have resulted in opportunities for pilots to upgrade to captain without having accumulated significant experience as a first officer in a Part 121 operation. Furthermore, Part 121 operators are not required to provide upgrading captains with specific training on leadership skills. When the captain of Flight 3407 upgraded in October 2007, Colgan Air provided an 8-hour training course on duties and responsibilities, the content of which focused on the administrative duties associated with becoming a captain. It did not contain significant information about developing in-cockpit leadership skills, management oversight, and command authority.

The NTSB recommended that the FAA issue an advisory circular with guidance on leadership training for upgrading captains at Parts 121, 135, and 91K operators (A-10-13). The guidance should include:

- methods and techniques for effective leadership;
- professional standards of conduct;
- strategies for briefing and debriefing;
- reinforcement and correction skills;
- other knowledge, skills, and abilities that are critical for air carrier operations.

Training Pilots for Adherence to Sterile Cockpit and SOPs

Both pilots of Flight 3407 engaged in non-pertinent conversation during the flight, and neither pilot addressed the other pilot's deviation from sterile cockpit procedures. Their ease in engaging in non-pertinent conversation suggested that the practice is not unusual among company pilots during critical phases of flight.

The sterile cockpit rule (14 CFR 121.542) is intended to ensure that a pilot's attention is directed to operational concerns during critical phases of flight rather than nonessential activities or conversation. In 2006, the NTSB recommended that the FAA direct POIs of all Parts 121 and 135 operators to reemphasize the importance of strict compliance with the sterile cockpit rule (A06-7). In response to this recommendation, the FAA issued SAFO 06004 on April 28, 2006, to emphasize the importance of sterile cockpit discipline. Four months after the SAFO was issued, the crew of Comair Flight 5191 attempted to take off on the wrong runway in Lexington, Kentucky. There were 49 fatalities in that accident, and the NTSB determined that the crew missed important cues during their taxi because they were engaged in non-essential conversation. Since the SAFO was issued, the NTSB has continued to investigate other accidents where the sterile cockpit rule was violated.

Even though the responsibility for sterile cockpit adherence is ultimately a matter of a pilot's own professional integrity, pilots work within the context of professionalism created through the mutual efforts of the FAA, operators, and pilot groups. The continuing number of accidents involving a breakdown in sterile cockpit discipline warrants innovative action by the FAA and the aviation industry to promptly address this issue. In the accident report for Flight 3407, the NTSB recommended that the FAA develop and distribute to all pilots multimedia guidance materials on professionalism in aircraft operations (A-10-15). The guidance should contain:

- standards of performance for professionalism;
- best practices for sterile cockpit adherence;
- techniques for assessing and correcting pilot deviations;
- examples and scenarios;
- detailed review of accidents involving breakdowns in sterile cockpit and other procedures, including this accident.

Fatigue

The crash of Flight 3407 gave the NTSB an opportunity to reexamine fatigue in aviation, an issue that has been on our Most Wanted List of Transportation Safety Improvements since 1990. Numerous accident investigations, research data, and safety studies show that flight crews who are on duty but have not obtained adequate rest present an unnecessary risk to the traveling public. Fatigue results from continuous activity, inadequate rest, sleep loss or nonstandard work schedules. The effects of fatigue include slowed reaction time, diminished vigilance and attention to detail, errors of omission, compromised problem solving, reduced motivation, decreased vigor for successful completion of required tasks, and poor communication.

Although the schedules of both pilots of Flight 3407 were within flight and duty time requirements, the flight crew was likely fatigued according to factual information gathered by NTSB investigators. The night before the accident, the captain likely did not obtain quality sleep because he slept in the company crew room, and his sleep time was interrupted, as evidenced by multiple log-ins to the company scheduling system at 21:51, then at 03:10, and again at 07:26. At the time of the accident, the captain had been awake at least 15 hours. A 1994 NTSB study identified performance degradation in accident flight crews when they have been awake for 12 hours.¹

Similarly, the first officer likely was not properly rested when she reported for duty. The night before the accident, she commuted from Seattle to Newark, changing planes shortly after midnight in Memphis, and arriving in Newark at 06:30, which was 03:00 Seattle time. In the preceding 34 hours, she had obtained a maximum of 8.5 total hours of sleep. Approximately 3.5 of those hours were obtained as she traveled cross-country in an airplane jumpseat, and those hours were interrupted by her stop in Memphis. She obtained the remaining 5 hours resting in the company crew room. Although the crew room had couches and recliners, it was not isolated and was subject to interruptions, uncontrolled noise and activity, lights, and other factors that prevent quality rest.

Scientific research and accident investigations have demonstrated the negative effects of fatigue on human performance, including reduced alertness and degraded mental and physical performance. Evidence suggests that both pilots were likely experiencing some degree of fatigue at the time of the accident. However, because the errors and decision made by the pilots cannot be solely attributed to fatigue, the NTSB stopped short of making fatigue a causal factor in the accident.

Commuting

The NTSB continues to look at the many factors that affect a flight crew's ability to achieve adequate rest. Long-distance commuting by pilots is often a necessity because of base transfers that change a pilot's home base to a location that is far from family or is in a high-cost area. About 70 percent of the Colgan Air pilots based in Newark were commuters, and approximately 20 percent of the pilots, like the pilots of Flight 3407,² commuted from over 1,000 miles away. Some commuting pilots rent "crash pads" (shared rooms or apartments) at their base, and some operators provide crew rest facilities so that crews can obtain uninterrupted sleep. Colgan Air did not have a crew rest facility, and neither of the pilots of Flight 3407 had a crash pad. Colgan Air's commuting policy addressed their pilots' responsibility to arrive at their base and report for duty on time, but the policy did not reference ways to mitigate fatigue resulting from commuting.

As a result of this accident investigation, the NTSB recommended that the FAA require all Parts 121, 135, and 91K operators to address fatigue risks associated with commuting, including identifying the number of pilots who commute, establishing policy and guidance to mitigate fatigue risks for commuting pilots, using scheduling practices to minimize opportunities for fatigue in commuting pilots, and developing or identifying rest facilities for commuting pilots (A-10-16). Unfortunately, in the aviation industry, fatigue-related decisions by operators and pilots—such as minimum crew hires, flight crew schedules and commuting—are decisions that too often reflect the economics of the industry, rather than the data and science of fatigue and human performance.

Most Wanted List of Transportation Safety Improvements

The issues of pilot proficiency and human fatigue are among the NTSB's most critical areas of concern in the safety of aviation. Last week, the NTSB updated its 2010 Most Wanted List to better emphasize these two safety concerns.

¹National Transportation Safety Board (1994). *A Review of Flightcrew-Involved, Major Accidents of U.S. Air Carriers, 1978 Through 1990*. Safety Study NTSB/SS-94-01. Washington, D.C.

²The captain commuted from Florida, and the first officer commuted from Seattle.

Improve the Oversight of Pilot Proficiency

The investigation of Flight 3407 demonstrated once again that there are troubling loopholes in the system under which airlines check records of prospective flight crew employees. When Colgan Air conducted a background check of the captain prior to his employment, the airline checked records from other airlines in accordance with the Pilot Records Improvement Act of 1996 (PRIA). However, these records do not include a review of FAA certificates of disapprovals. The captain of Flight 3407 had reported on his employment application that he had failed 1 FAA checkride, when in fact he had failed 3. Neither PRIA nor FAA's guidance under PRIA requires operators to obtain notices of disapproval for flight checks for certificates and ratings.

Our testimony has already discussed the captain's demonstrated weaknesses in basic aircraft control and attitude instrument flying during annual checks at Colgan Air, which should have made the captain a candidate for remedial training. The NTSB has long recommended remedial training. On October 30, 2009, the FAA indicated that about one-third of carriers had implemented remedial training programs, including 6 of 27 regional carriers; less than 3 months later, on December 10, 2009, the FAA Administrator stated during his testimony before this committee that two-thirds of the air carriers without advanced qualification programs had systems in place to identify and manage low-time pilots and pilots with persistent performance problems. In their "Call to Action" report published in January 2010, the FAA stated that only 15 carriers had some part of a remedial training program and 8 carriers did not have any component of a remedial training program in place. While the NTSB asked for the complete survey results, this information has not been provided, and the NTSB has not determined the extent that air carrier remedial training programs address pilot performance deficiencies and failures during training.

Therefore, we added 2 recommendations to the 2010 Most Wanted List under a new issue area, "Improve the Oversight of Pilot Proficiency:"

- Require all Parts 121 and 135 air carriers to obtain any notices of disapproval for flight checks for certificates and ratings for all pilot applicants and evaluate this information before making a hiring decision. (A-05-01);
- Require all 14 *Code of Federal Regulations* Part 121 air carrier operators to establish programs for flight crewmembers who have demonstrated performance deficiencies or experienced failures in the training environment that would require a review of their whole performance history at the company and administer additional oversight and training to ensure that performance deficiencies are addressed and corrected. (A-05-14).

Fatigue Management Systems

In June, 2008, the NTSB issued recommendations to the FAA to develop guidance for fatigue management systems (A-08-44) and to develop and use a methodology to continually assess the effectiveness of fatigue management systems used by operators (A-08-45). A fatigue management system incorporates various components and strategies to mitigate the hazards of fatigue in aviation operations, including scheduling policies and practices, attendance policies, education, medical screening and treatment, personal responsibility during non-work periods, task and workload issues, rest environments, commuting policies and napping policies. The FAA has neither guidance nor regulations addressing fatigue management systems.

In response to the FAA's lack of action in this area, the NTSB updated the Most Wanted List issue area "reduce Accidents and Incidents Caused by Human Fatigue in the Aviation Industry" to include these recommendations on fatigue management systems.

Conclusion

Our investigation of Flight 3407 revealed 2 other aviation safety issues which we will explore in greater depth in events planned for the coming months. On May 17-19, 2010, we will hold a Public Forum on Ensuring and Supporting High Standards in Flight Crew and Air Traffic Controller Performance. At this forum we plan to bring industry leaders together to discuss the selection of pilots and controllers, training methods, and the development of techniques that support safe practices, such as peer mentoring and support, voluntary reporting programs, and the use of technology in oversight.

Later this fall, we will hold a Public Symposium on Airline Code-Sharing Arrangements and Their Role in Aviation Safety. The symposium will provide background information on domestic and international code-sharing arrangements and their oversight, and provide insight into the best practices regarding the role of major airlines in ensuring the safety of regional code-sharing partners.

In conclusion, the tragic crash of Flight 3407 brought the world's attention to the seriousness and complexity of maintaining safety in a transportation industry that continually evolves. If we are serious about aviation safety, we must establish a system that minimizes pilot fatigue and ensures that flight crews report to work rested and fit for duty. We must also have a system in which we are steadfastly confident that all of our commercial pilots are proficient and well-trained.

Senator DORGAN. Ms. Hersman, thank you very much.
Ms. Gilligan?

**STATEMENT OF MARGARET GILLIGAN,
ASSOCIATE ADMINISTRATOR FOR AVIATION SAFETY,
FEDERAL AVIATION ADMINISTRATION**

Ms. GILLIGAN. Thank you very much. I'm pleased to be here today to update you on the FAA's Call to Action on airline safety and pilot training—to strengthen our safety program.

We released the final report on Call to Action at the end of January. We have given copies to your staff. The report details the results of our efforts, including the new and renewed commitments we received from industry and labor, the results of our Focused Inspection Initiative, and an update on our rulemaking activities.

But, efforts have not stopped, nor even slowed down, just because we completed the final report. For example, since the final report was issued, we've published an Advance Notice of Proposed Rulemaking seeking recommendations from the public to improve pilot performance and qualifications. Just last week, we completed a survey to follow up on the results of our Focused Inspection Initiatives. The survey revealed even more improvement in the number of carriers who have implemented remedial training programs. When we first did the inspection initiative, 15 carriers had only partially implemented remedial training programs, and 8 carriers had no program at all. As of last week, 93 of the 95 active certificates have completed—completely implemented remedial training programs, and the remaining 2 have implemented parts of those programs. Safety is at the core of FAA's mission, and we will always strive to make the safe system even safer.

Our efforts in the Call to Action reflect the same approach we've taken to establish the unprecedented level of safety we enjoy today: identify voluntary actions, monitor implementation, propose new standards, and oversee the compliance of the industry. Unfortunately, FAA safety programs are too often measured by how precisely, or how rapidly, we comply with NTSB recommendations for rulemaking. This measure creates a misimpression about the safety of the aviation safety system and the efficacy of the FAA.

For example, since the Board added fatigue recommendations in aviation to its most wanted list in 1995, we have reduced the passenger fatality rate by 85 percent, even while operations increased and approximately 11 billion passengers traveled by air. Few industries in the world can claim that kind of success. Using the same multipronged approach we've used in the Call to Action, we took action to address pilot fatigue while longer-term solutions were being developed. The FAA supported—and, in fact, in most cases, financed—the research that has been done to advance the scientific study of fatigue as it affects aviation. While we were doing that research, in order to mitigate the remaining risk, we

clarified the requirements of our existing regulations, and we focused our oversight to ensure that those rules were followed.

During that same 15 years, FAA issued nearly 400 final rules, more than 20 final rules every year. These rules introduced new technology, improved training, and enhanced procedures. More importantly, these actions virtually eliminated accidents such as controlled flight into terrain, wind shear, and even icing, just as an example, from scheduled commercial aviation. Acknowledging that we can never remove all the risk in the system, we've improved the design standards for aircraft to ensure passengers have every possibility to evacuate a damaged aircraft. And we have seen the success of those efforts in recent years.

While we are proud of the aviation safety record we've established, safety professionals at FAA have not been resting on our laurels while the Board has issued recommendations. We've been acting, we have been implementing, and ultimately we've been improving the safety of the system.

Much of our work in those years has addressed Board recommendations. We appreciate the direction that the Board helped set, and we appreciate the fact they have found our work acceptable in 82 percent of those recommendations.

But, it's important to note, we don't wait for recommendations. In fact, when the Board issued the 25 new Colgan-related recommendations this week, we already had work underway to address many of them.

Since aircraft accidents are so rare, the tragic Colgan accident has served, as you've noted, to refocus our ongoing efforts to improve aviation safety. The FAA's work over the last 50 years of commercial aviation has yielded measurable and meaningful safety improvements, and I assure you, under the leadership of Administrator Randy Babbitt, that will continue.

That concludes my opening remarks, Mr. Chairman. We'll be glad to take any questions.

[The prepared statement of Ms. Gilligan follows:]

PREPARED STATEMENT OF MARGARET GILLIGAN, ASSOCIATE ADMINISTRATOR FOR
AVIATION SAFETY, FEDERAL AVIATION ADMINISTRATION

Chairman Dorgan, Senator DeMint, members of the Subcommittee:

Thank you for inviting me here today to provide you with an update on the Federal Aviation Administration's (FAA's) Call to Action on airline safety and pilot training. There is no question that the FAA's job is to ensure that we have the safest aviation system in the world. The aviation safety record in the United States reflects the dedication of safety-minded aviation professionals in all parts of our industry, including the FAA's inspector workforce. In an agency dedicated to aviation safety, any failure in the system, especially one that causes loss of life, is keenly felt. When accidents do happen, they reveal risks, including the tragic Colgan Air accident. Consequently, it is incumbent on all parties in the system to identify the risks in order to eliminate or mitigate them. As Administrator Babbitt noted when he appeared before you in December, history has shown that we are able to implement safety improvements far more quickly and effectively when the FAA, industry, and labor work together on agreed upon solutions. The fastest way to implement a solution is for it to be done voluntarily, and that is what the Call to Action was intended to facilitate. On January 27, the FAA issued a report that describes the progress made toward fulfilling commitments made in the Call to Action and offers recommendations for additional steps to enhance aviation safety. I would like to use this opportunity to review the issues the Administrator identified in December and let you know where we stand on them.

Pilot Flight Time, Rest and Fatigue: When Administrator Babbitt was last here he told you that the aviation rulemaking committee (ARC) he convened for the purpose of making recommendations on flight time, rest and fatigue, consisting of representatives from the FAA, industry and labor organizations, provided him with recommendations for a science-based approach to fatigue management in early September. While we were extremely pleased with the product provided, the ARC did not reach a consensus agreement on all areas and was not charged with doing any type of economic analysis. Consequently, in spite of the Administrator's direction for a very aggressive timeline in which to develop a Notice of Proposed Rulemaking (NPRM), his hope that a rulemaking proposal could be issued by the end of last year was not realized. The complexities involved with these issues are part of the reason why the FAA has struggled to finalize proposed regulations on fatigue and duty time that were issued in the mid-1990s. However, with the Administrator's continued emphasis on this topic, we hope to issue an NPRM this spring. Although this is slightly later than we originally hoped, it is still an extremely expedited schedule, and I can assure you the FAA team working on this is committed to meeting the target.

One of the issues contributing to fatigue, that I know is of interest to many of you, is that of pilots who commute by air to their job. I would like to describe some of the e-mails and letters the Administrator has been receiving on the issue of commuting, from pilots who choose to commute by air to their job. As you can imagine, those pilots who commute responsibly are understandably concerned that they could be forced to relocate because of the irresponsible actions of a few. Should some sort of hard and fast commuting rule be imposed, it could result in families being separated, people being forced to sell homes at a loss, or even people being forced to violate child custody agreements. It is important to keep in mind these personal accounts, because, to people not familiar with the airline industry, the issue of living in one city and working hundreds of miles away in another does not make sense. But in the airline industry, this is not only a common practice, it is one airline employees have come to rely on. So we want to emphasize these issues are complex and, depending on how they are addressed, could have significant impacts on people's lives.

Focused Inspection Initiative: From June 24, 2009 to September 30, 2009, FAA inspectors conducted a two-part, focused review of air carrier flight crewmember training, qualification, and management practices. The FAA inspected 85 air carriers to determine if they had systems to provide remedial training for pilots. The FAA did not inspect the 14 carriers that have FAA-approved Advanced Qualification Programs (AQP) because AQP includes such a system. Seventy-six air carriers, including AQP carriers, have remedial training programs. An additional 15 air carriers had some part of a remedial training program. There were eight air carriers that lacked any component of a remedial training program that received additional scrutiny and have since instituted some component of a remedial training system. Since we started, all carriers have implemented some component of a remedial training program. The FAA inspectors also observed 2,419 training and checking events during the evaluation. In the few instances we observed regulatory non-compliance, we took corrective action.

Training Program Review Guidance: Based on the information from last summer's inspections, the FAA is drafting a Safety Alert for Operators (SAFO) with guidance material on how to conduct a comprehensive training program review in the context of a safety management system (SMS). A complementary Notice to FAA inspectors will provide guidance on how to conduct surveillance. SMS aims to integrate modern safety risk management and safety assurance concepts into repeatable, proactive systems. SMS programs emphasize safety management as a fundamental business process in the same manner as other aspects of business management. Now that we have completed our data evaluation and drafting, both guidance documents are in internal coordination.

Obtain Air Carriers' Commitment to Most Effective Practices: To solidify oral commitments made at the Call to Action, Administrator Babbitt sent a letter to all part 121 operators and their unions and requested written commitments to adhere to the highest professional standards. Many airlines are now taking steps to promote the larger airline's most effective safety practices at their smaller partner airlines. The Air Transport Association's Safety Council is now including safety directors from the National Air Carrier Association and the Regional Airline Association in their quarterly meetings. Several large air carriers are conducting periodic meetings with those with whom they have contract agreements to review safety information and we are encouraged by these efforts.

In addition, I am pleased to say that since July 2009, after the Call to Action, the FAA approved 12 new Flight Operations Quality Assurance (FOQA) programs.

Three air carriers that had no Aviation Safety Action Programs (ASAP) have now established them. Four more air carriers have established new ASAP programs for additional employee groups. All of this supports the contention that the Call to Action did make a difference.

Professionalism and Mentoring: Last week, the FAA met with labor organizations to discuss further developing and improving professionalism and transfer of pilot experience. In the interim, these organizations have answered the Call to Action and support the establishment of professional standards and ethics committees, a code of ethics, and safety risk management meetings between the FAA and major and regional air carriers. We also believe that labor organizations can explore some of the ideas raised in the Call to Action road shows, such as establishing joint strategic councils within a “family of carriers,” use of professional standards committee safety conferences, and mentoring possibilities between air carriers and university aviation programs, with the goal of coming up with concrete ideas on mentoring. These ideas merit further discussion and the FAA looks forward to continuing to work with these organizations on these concepts.

Crew Training Requirements: As the Administrator explained during his last appearance before this committee, the FAA issued a rulemaking proposal in January 2009 to enhance training programs by requiring the use of simulation devices for pilots. More than 3,000 pages of comments were received. The FAA is now developing a supplemental proposal that will be issued in the coming months to allow the public to comment on the revisions that were made based on the comments that were submitted.

One of the things that the Call to Action has shone a light on is the issue of varying pilot experience. The FAA is attempting to address this issue with an Advanced Notice of Proposed Rulemaking (ANPRM) in which we can consider possible alternative requirements, such as an endorsement on a commercial license to indicate specific qualifications. We know some people believe that simply increasing the minimum number of hours required for a pilot to fly in commercial aviation is appropriate. As Administrator Babbitt has stated repeatedly, he does not believe that simply raising quantity—the total number of hours of flying time or experience—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.

The ANPRM requests recommendations from the public to improve pilot performance and professionalism; specifically on whether existing flight crew eligibility, training and qualification requirements should be increased for commercial pilots engaged in part 121 operations. The FAA is requesting comments and recommendations on four concepts for the purpose of reviewing current pilot certification regulations. The four concepts are: (1) requirement for all pilots employed in part 121 air carrier operations to hold an Airline Transport Pilot (ATP) certificate with the appropriate aircraft category, class and type rating, or meet the aeronautical experience requirements of an ATP certificate; (2) academic training as a substitute for flight hours experience; (3) endorsement for air carrier operations; and, (4) new additional authorization on an existing pilot certificate. The FAA has also asked for recommendations from industry and the public on any other concepts they may wish to offer. The ANPRM was published in the *Federal Register* on February 8.

Pilot Records: While Congress is working to amend the Pilot Records Improvement Act of 1996 and the FAA amends its guidance to airlines, Administrator Babbitt asked that air carriers immediately implement a policy of asking pilot applicants to voluntarily disclose FAA records, including notices of disapproval for evaluation events. The airlines agreed to use this best practice for pilot record checks to allow for a more expansive review of records created over the course of a pilot’s career. The expanded review would include all the records the FAA maintains on pilots in addition to the records airlines already receive from past employers. Of the 80 air carriers that responded to the FAA on this issue, 53 air carriers, or 66 percent, reported that they already require full disclosure of a pilot applicant’s FAA records. Another 15 percent reported that they plan to implement the same policy.

As the Administrator stated when he appeared before you in December, the core of many of the issues facing the air carrier industry today is professionalism. It is the duty of the flight crew to arrive for work rested and ready to perform their jobs, regardless of whether they live down the street from the airport or a thousand miles away. Professionalism is not something we can regulate, but it is something to which we must encourage and urge pilots and flight crews to aspire. The conversations we have been having, in part because of the Call to Action, help emphasize the importance of professionalism in aviation safety.

In conclusion, our efforts will not stop or even slow down just because the final report on the Call to Action was issued. We have been gratified with the response to this effort. We believe that the collective efforts of FAA, the airlines, labor unions

and, of course, Congress, will continue to result in implementing best practices, transferring pilot experience, and achieving an overall improvement in safety. Safety is at the core of the FAA's mission, and we will always strive to make a safe system safer.

Mr. Chairman, Senator DeMint, members of the Subcommittee, this concludes my prepared remarks. I would be happy to answer any questions that you might have.

Senator DORGAN. Thank you very much.

It is true that accidents—commercial aviation accidents have become rare. There's no question about that. And yet, as I look at this particular accident and all of the evaluation of issues that relate to it, it seems to me that we are very fortunate that accidents have been rare.

I was on the phone this morning, on some airline service issues for a community, and like most communities, that community's service has changed substantially over the years. Used to be served by a carrier that would fly 727s originally, and then 319s, and so on, larger carriers—or, larger planes with pilots from the trunk carrier. Now most of the service in that particular city is by regional carriers. Eighty percent—I think 75 percent of the service is RJ—50-seat regional jets. And so, the companies that fly them are, in many cases, very different than the companies that were flying into that city previously, despite the fact that most passengers wouldn't know that, because the planes look the same, same company name on the planes, and so on.

So, service has changed very substantially. With 50 percent of the flights—as I understand it, 50 percent of the flights in this country are now regional carrier flights. And the question is, Do we have one level of safety? And so, I want to ask a series of questions.

First of all, I think, Ms. Gilligan, you mentioned, in the Focused Inspection Initiative, which started June 24, 2009, you wanted to go to these carriers and inspect the carriers to determine, Do they have remedial training for pilots? And you indicated that eight carriers lacked any component of any remedial training program. These are carriers, I assume, that are picking up passengers at various airports around the country?

Ms. GILLIGAN. Yes.

Senator DORGAN. All regional carriers, would they have been?

Ms. GILLIGAN. I don't know that, off the top of my head right now.

Senator DORGAN. What would you—

Ms. GILLIGAN. We do have the names of the carriers, and we can certainly check that.

Senator DORGAN. What would you think?

Ms. GILLIGAN. They were not the eight or nine mainline carriers that most people are familiar with, but they—I don't know that they were providing service that is—regional service—

Senator DORGAN. Right.

Ms. GILLIGAN.—or were independent operators.

Senator DORGAN. But I was stunned that—

Ms. GILLIGAN. But, we can provide that.

[The information referred to follows:]

Prior to the Call to Action, these eight carriers (three of which were predominately cargo carriers) lacked procedures for identifying pilots who needed remedial training as a result of substandard performance during a check ride. In one case, however, the carrier had in place an Advanced Qualification Program (AQP), a vol-

untary alternative to the traditional regulatory requirements for pilot training and checking under which the FAA may approve significant departures from traditional requirements, subject to justification of an equivalent or better level of safety. At the time of the focused inspection, however, the carrier had just acquired a new aircraft type that was not yet covered by its AQP. Therefore, we listed the carrier as not meeting the focused inspection criteria.

Senator DORGAN. I was stunned that you have eight commercial air carriers that are—that were, last summer, picking up passengers and flying passengers around the country, that would have had no remedial training program for pilots, of any type. Does that stun you?

Ms. GILLIGAN. It surprises me. But, if I may put that in a little context?

Senator DORGAN. Sure.

Ms. GILLIGAN. By regulation, anytime a pilot fails a check ride or an event in that training, they are required by regulation to receive additional training and to be signed off by an instructor pilot before they can take that check again. So, by regulation, any pilot who does fail a particular event must get additional training, have that signed off, and then is tested by a different independent check pilot. All of the carriers meet that regulation.

Several years ago, we put out guidance that recommended the creation of a remedial training program, which not only assured that regulatory requirement, but recommended that the carriers track, over the career of the pilot, those failures. Because you may have one, and it may be 5 years before you may have another one. It may be 5 months. It was important, we believed, that they be able to track that, for two reasons: to evaluate the effectiveness of their own training programs, and to continue to identify if there are particular pilots who demonstrate the failure of check items more often than others. It is that tracking program that those eight carriers had not then implemented. As of today, I believe six of those have implemented fully, and I believe the two that still only have partial programs were part of that original eight, and we can give you all of that data, if you'd like.

[The information referred to follows:]

Through a Safety Alert for Operators (SAFO), the FAA strongly encourages part 121 air carriers to establish remedial training programs for pilots with persistent performance deficiencies. Remedial training programs are specific to each carrier's operations and to its FAA-approved training program. Although these programs are voluntary, we are happy to report that of the 95 carriers active today, 93 meet the intent of the FAA's SAFO regarding remedial training. The remaining two carriers offer remedial training programs, but they do not meet the full intent of the SAFO because they do not currently have procedures in place to follow up and ensure the effectiveness of the remedial training.

Senator DORGAN. But, it just seems to me—I understand that most carriers complied, and moved, as a result of the request of the FAA, and some did not.

Ms. GILLIGAN. Yes.

Senator DORGAN. And it seems to me to be pretty persuasive evidence that you've got to make things happen. I mean, the FAA has to make sure that carriers are doing what the FAA wants them to do. And I—

Anyway, let me go on to the range of issues that are raised. Ms. Hersman, you said 25 recommendations, is that correct, in your report?

Ms. HERSMAN. Yes.

Senator DORGAN. Can we begin to go through some of those in the major categories? What have you recommended, or what is in your report with respect to fatigue or crew rest?

Ms. HERSMAN. In our report, the Safety Board issued a recommendation specifically to address commuting. One of the things that we thought was important in this accident, was that this crew were both commuting pilots, and they both commuted from some distance away. But we did identify that this wasn't unusual. In Colgan's base in Newark, 70 percent of the pilots at that base were commuter pilots, and over 20 percent of those commuting pilots commuted from over 1,000 miles away. What we found in this investigation was that neither of the crew members had a residence or a crash pad in the Newark area, and so we did identify some concerns about the choices that they made, either commuting across country on an overnight flight, with a stop in Memphis, or sleeping in the crew room. The captain had slept in the crew room two of the three previous nights before the accident. And we know that not just the quantity of sleep is important, but the quality of sleep is important. Trying to get sleep on a redeye, coming across country, is not going to produce quality sleep. So, we did make a recommendation——

Senator DORGAN. Can I stop you at that point?

Ms. HERSMAN. Sure.

Senator DORGAN. The captain of this flight, you say, spent two of the previous three nights in the crew room, all night long. Is that correct? I mean, during the night and morning hours? Are there beds in the crew room?

Ms. HERSMAN. No. They do have some sofas and some reclining chairs in the crew room, but it is not set up for recuperative rest. And the company actually prohibited overnighting in the crew room.

Senator DORGAN. All right. So, the—this issue of—which is, I think, somewhat different than how the FAA classifies fatigue—I mean, that's—I think that relates more to a workday period. But, this issue of commuting, and then whether they have a crash pad or someplace to sleep, or whether, in this case, a pilot of an airplane spends two nights in a crew room with no bed, prior to a flight, in the winter, with icing, and so on—that just begs the question of, Is that a very unusual occurrence? Or have you done anything to determine whether this is just, sort of, an aberration? This is one captain who wasn't thinking very clearly about not sleeping in a bed someplace. Have you done any surveys to find out, at LaGuardia, is this the only captain that did that, or has done that, or is doing that? What's your sense of that?

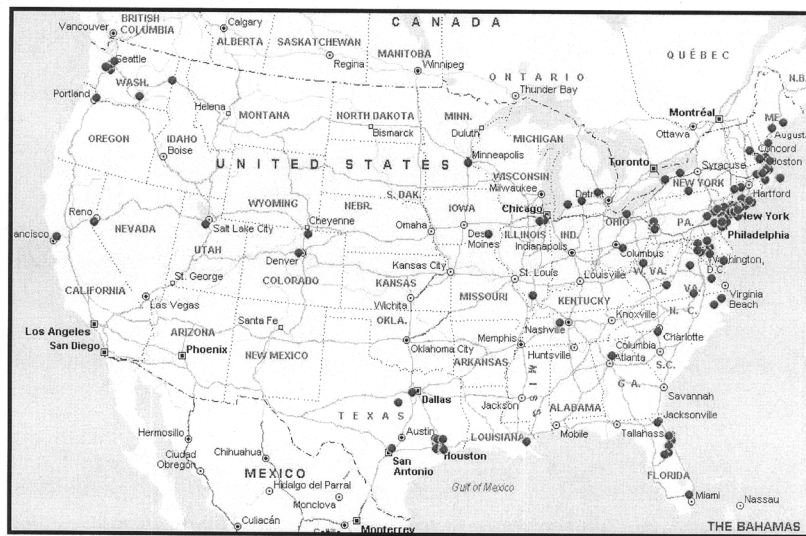
Ms. HERSMAN. In this accident investigation, we could find specific information about this crew and we know that this was a commuting concern, because many of the pilots recently had been moved to Newark. When we asked Colgan to look at how many of their pilots were commuting—we actually have a chart that shows where they're commuting from around the country. What was of

most concern to us was that 70 percent of the pilots were commuting pilots, and 20 percent were commuting from over 1,000 miles away.

[Additional information from Ms. Hersman follows:]

These data were provided by Colgan during the Flight 3407 investigation. They apply to pilots assigned to the Newark base, and are described in section 1.17.4.1 on page 47 of the NTSB accident report (AAR1001). The chart is contained on page 26 of the Human Performance Group Chairman's Factual Report (<http://www.nts.gov/Dockets/Aviation/DCA09MA027/418082.pdf>).

Figure 1.
Geographic distribution of EWR-based pilots using FAA address of record



The NTSB has heard anecdotally that as many as 50 percent of pilots commute to work. Pilots sometime choose to commute to work from distant cities as a matter of personal choice and sometimes out of necessity. Air carriers occasionally close bases, forcing many of their pilots to relocate or begin commuting.

One of the other issues that we identified was that the first officer's pay was fairly low. Many pilots—some who contacted us with anecdotal information, during the public hearing and after—described circumstances where their bases were changed, and they could not afford to live in the new area. We noted that Colgan's management did have a cost-of-living adjustment for living in the Newark area, but the pilots did not.

Senator DORGAN. But, let me put up—these are the Colgan air pilots commuting to the Newark base. You will see—and this is probably the chart you're referring to, it's the one we are working with—and it shows the locations across the country from which pilots are traveling to Newark.

But, my question is more specific. Do any of us in this room have any knowledge of whether this is a—just a complete aberration with one captain, who spends two nights in a crew room with no bed prior to this flight that ended in tragedy? Do we have any knowledge, have we done any surveys, have we asked anybody

about that? And I would ask both of you—Ms. Hersman, any surveys done? And, Ms. Gilligan, is it your sense that this is a practice that's prevalent, or highly unusual?

Because it seems to me, on this issue of fatigue and crew rest and commuting—all of which kind of go into one bundle, for me—it seems to me that, clearly, if any one of us in this room were about to board an airplane, and someone told us, "That captain that's getting in the cockpit hasn't slept in a bed for two nights," would any of us have second thoughts about that? You'd better believe we would.

So, tell me, what do we know about this? Do we know, is—we know about this crew. Do we know anything else? Or are we just blind on everything else, at the moment?

Ms. HERSMAN. The Safety Board doesn't have any further information, beyond our survey of the commuting pilots in Newark. We don't know how many of them had crash pads. We do know the information about the two pilots involved in this—

Senator DORGAN. How—

Ms. HERSMAN.—accident.

Senator DORGAN.—about the carrier itself even asking for self-reporting? Have they, in the aftermath of this accident, said, "You know what? We had a captain here that hadn't been in a bed for two nights. We'd better ask the others?" How prevalent is it to find people spending all night in a crew room, without a bed, before a flight? Do they know whether Colgan has asked other pilots, at least on a self-reporting basis, to know what is happening there?

Ms. GILLIGAN. I don't know, sir, but we can certainly ask the carrier and find out if they have done any kind of review to that extent. We do know commuting is a fairly common practice within the industry, both for the major and for the regional carriers, and it has been for a very long time. As the Chairman indicates, the movement of bases, the pilots bid on different equipment out of different locations, for career reasons. It is a—there are lots of reasons why where a pilot works changes over the course of his or her career. And their decision to remain living where their family is located is a decision that is not uncommon.

We do know it sounds—to most of us who drive a few miles, perhaps, or take the metro into work like an odd decision to make. But, many pilots have commuted for their whole careers, and do so very responsibly. And we agree, we need to address this as we look at the issues of fatigue.

Senator DORGAN. But let me ask you whether you think that this is a reasonable concern.

If—Ms. Gilligan, if you have a flight at 12 o'clock from National this afternoon, and you're about to drive out and get on that Dash-8, and you know the captain hasn't slept in a bed for two nights—does that give you pause about whether you want to take that flight?

Ms. GILLIGAN. Certainly, sir. We expect pilots to react professionally and to be responsible and arrive at work rested and ready to take their responsibilities. I absolutely agree.

Senator DORGAN. The thing that kind of troubles me about this is, when—and we'll get to all of these things—stick shaker training and sterile cockpit and commuting and—the thing that troubles me

is, we now have done an unbelievable inspection of what happened in that cockpit of one airplane taking one flight, and it appears to me to have about six or eight very serious problems. And the question is, Is this just serendipitous, that it all is created in that one cockpit and doesn't exist elsewhere, or are we seeing the evidence of problems that we really need to get on and address and fix?

And in this area of commuting, and the question of, "At the end of your commute, where are you getting some rest in order to be prepared for that next flight, as a professional pilot?"—that's a very important question. And the thing is, we apparently—the three of us in—well, four of us—know nothing about the practice, beyond the description of these two people. My understanding is that the copilot herself—the copilot did not have—in your investigation, the copilot was not seen to have had a rest period in a bed, either. Is that correct?

Ms. HERSMAN. No, the first officer flew from Seattle. She boarded a flight in Seattle the evening before the accident, flew in the jumpseat of a cargo operator, to Memphis, got off in Memphis, and then flew from Memphis to Newark. There's a 3-hour time difference that she experienced as she traveled across country, as well. They estimated that she received a couple of hours of sleep when she was flying across country. She tried to nap, also, in the crew rest area that morning, before she went on duty.

So, both individuals did not have recuperative-quality sleep the night before the accident. That's why we made our recommendation to the FAA to address fatigue risks associated with commuting: identifying pilots who commute, establishing policy and guidance to mitigate fatigue risks for commuting pilots, using scheduling practices to minimize opportunities for fatigue, and developing or identifying rest facilities for commuting pilots.

We don't think that Colgan is unique. We know that this goes on in the industry. I think our problem is that we can't identify what the issues are until an accident occurs, and we investigate what happened in that situation.

After the accident, Colgan did take some action. One of the things that the company did was to put out a policy that required the lights to stay on in the crew room at all times, 24 hours-a-day. That wasn't mitigating the challenge for people who were commuting; it was just ensuring that any sleep obtained in the crew room was going to be with the lights on.

Senator DORGAN. Yes. The difficulty is, this also relates to the question of compensation, because someone who is living in Seattle, flying to the duty station in LaGuardia, and is paid—I don't know what—I think it was \$20- or \$23,000 a year—is not very likely going to have the resources to go get a hotel room somewhere. So, there's a relationship there, as well.

Well, I—what do you—just on—leaving this point, what do you think we need to do to understand whether this is a common practice or a very unusual practice, that we've got people boarding commuter airlines with no sleep, or very little sleep? You're making recommendations. What do we do at the FAA to implement those recommendations?

Ms. GILLIGAN. Well, I think, as you know, we already have our flight and rest rule under executive review within the Administra-

tion. As the Administrator committed, we're moving as quickly as possible to put forward that new proposal, which will enhance the requirements for flight and rest, and how work is assigned.

In that, we were also asking for additional insight into this particular issue, because, again, commuting has been a part of the industry for quite a long time, and can be done responsibly. We want to understand how we can set a framework for that and how the airlines can hold their crew members responsible for that. And I think we'll see real progress in that way.

The recommendation is for additional guidance materials. I think that will be a part of how we will implement our new rulemaking. We will provide guidance on how the airlines can best address these kinds of risks.

Senator DORGAN. But, the issue is, there's already a rule. I mean, the rule would have told both of those pilots, "You can't show up at LaGuardia and spend your time in the crew room. You've got to get rest somewhere." Right? I mean——

Ms. GILLIGAN. Yes, sir.

Senator DORGAN.—doesn't that rule exist?

Ms. GILLIGAN. Yes, sir.

Senator DORGAN. So, then the question is—then the question is, not just a new rule, although a new rule is probably reasonable, but, How do we enforce rules?

Ms. GILLIGAN. That's right.

Senator DORGAN. And what do we know about whether these current rules are enforced, generally, or not enforced much at all?

Ms. GILLIGAN. And that's why the Administrator is calling for a renewed emphasis on pilot professionalism, because, at the end of the day, oftentimes it is up to the pilot himself or herself to evaluate that they have met their personal responsibility. In the meantime, you're right, we can enhance the framework within the regulations, we can give both the airline and the individual crew member better opportunities to be properly prepared for the flights. But, the pilot must come to work prepared to work——

Senator DORGAN. All right.

Ms. GILLIGAN.—and rested and mentally fit and physically capable. And we are putting a huge push on pilot professionalism as part of the Administrator's agenda.

Senator DORGAN. All right. I'm going to ask about a series of things that—the credentials of a pilot, that are necessary to fly an airplane, the responsibility of trunk carriers for the regionals that bear their name, and specifically about training issues. But, before I do that, I want to call on the Ranking Member of the Subcommittee, Senator DeMint.

**STATEMENT OF HON. JIM DEMINT,
U.S. SENATOR FROM SOUTH CAROLINA**

Senator DEMINT. Thank you, Mr. Chairman. And I really appreciate your line of questioning.

The Chairman has mentioned, several times, the idea of a survey. I did a lot of that in my previous life, and I think he has made an excellent point. We know what happened in this particular situation, a year ago. The rules weren't followed, so making new rules is not necessarily going to help the situation.

But, it does seem that an anonymous-type survey of pilots could, not only help determine what is really happening now, but also get some ideas from them on what they see as a way to assist in this lifestyle, that has apparently been created over many years of sometimes very long commutes. We don't have a real handle on whether this is a problem of 5 percent of pilots or 80 percent of pilots. Hopefully, some of their ideas on what could assist them during their commutes, whether it's per diems or just other facilities available would be useful. It seems like we're flying in the dark here, really. And after a year of knowing we had serious, and multiple problems in this one cockpit, it doesn't seem as we know much more today about how widespread that is than we did a year ago.

And so, I'm concerned about the approach here of encouraging accountability and professionalism and things like that without trying to find out more about how widespread it is or even how they—the carriers—could assist pilots in making sure that they have every resource available to be professional, and to show up rested. I'm just curious why there hasn't been more pursuit to find out, industrywide, the degree of this problem.

Ms. GILLIGAN. Well, I think, sir, there are two things. One is that we do know that the vast majority of pilots come to work prepared to work. The data shows that.

Senator DEMINT. Now, how do you know that?

Ms. GILLIGAN. Because the safety data indicates that. We are not seeing accidents and incidents in—

Senator DEMINT. OK, so—

Ms. GILLIGAN.—any vast number, and—

Senator DEMINT. But, you don't know that they're rested, you just know that we don't have a lot of accidents, right?

Ms. GILLIGAN. We know they are performing and meeting their responsibilities—

Senator DEMINT. OK.

Ms. GILLIGAN.—and that is a measure of whether or not they're properly rested. You're right, we can't know exactly, but I think it's a reasonable measure that most pilots are professional. We can't implicate the whole community based on this accident.

So, you're right. We need to find exactly what the sweet spot for this issue is.

There is the ability for pilots to self-report, right now. All the airlines have programs for pilot reporting, anonymous reporting. They can then look at the results from that reporting and begin to address those safety trends. I haven't asked the airlines whether they're seeing a trend in reports related to either commuting or fatigue, but we certainly can do that. I think that's a wise thing to do.

The industry comes together twice a year to review their general results on those safety reports, and we will ask them at the next meeting to come in and report on what they are seeing on the issues of commuting, and whether there's a trend there. That would certainly be helpful.

Senator DEMINT. OK, go ahead.

Senator DORGAN. Let me just—on that point—because the entire system has changed so dramatically, with half the flights now being regional carriers, isn't it just something that we should as-

sume, that when you've got somebody making \$20- or \$22,000 a year flying across the country to get to their duty station, that they're not going to have the money to go out and get a hotel room? So, shouldn't we just assume that there is probably a larger problem here, that is a growing problem as you have more and more flights that are commuter airline flights with lower-paid pilots?

Ms. GILLIGAN. Well—

Senator DORGAN. Shouldn't we assume that's a problem?

Ms. GILLIGAN. I think we certainly agree that it is a risk area that we have to understand better. I completely agree with that. I don't know how far most pilots commute. I don't know—and perhaps we need to know that data. I agree with you, sir, that that's something that we should be pursuing, certainly as we're looking at our fatigue rule, to see whether and how we can give better guidance on how both the pilots and the operators can try to address this issue. I agree.

Senator DEMINT. Mr. Chairman, I know you've got a line of questioning. But, I would encourage you, just that—the power of finding out the extent of the problem. I know the carriers, they say the pilots can report. But, I think we should consider the idea of asking all the carriers to get all of their pilots to fill out some anonymous survey that helps us to create a pattern of what's going on now, to seek pilots' advice on how we could help.

The carriers have a different role to play than we do here. Our job is strictly safety, and they have to run an airline, they have to make a profit, they have to do a lot of things. And I know safety's at the center of that for them, as well. But, this is more than a carrier-to-carrier issue, and I would just ask you to consider ways that we might collect information and develop a clear assessment of the situation today to see if—from the pilots and the carriers perspective, that there may be a role that we play that can either limit this commuting system or make it work in a way that's safer. Because, just because the safety record is good does not mean the pilots are rested. All of us have driven cars on long trips and wondered how we ever got there, we were so tired. We made it, so we had a safe outcome. But I think we need to take it a step further here. And I really do think the Chairman's right, that we don't know how widespread this is, I'm not sure we can fix the problem, or—and neither can the carriers.

Senator DORGAN. Senator DeMint, thank you.

I think we're going to ask to have some kind of survey done. We'll work together on that. Because I think we need to understand, What is the dimension of the issue out there, and the problem? It just seems logical to me that if we—if we've got more low-paid people out there commuting across the country—in this case, both people in the cockpit going through the evening without having proper bed rest—I just—it's unlikely, to me, that—it seems unlikely to me that this is the only circumstance.

Maybe this has become a practice; that's the way you do things. If it is, it has to stop. And—

Let me ask some questions about training, if I might. Ms. Hersman, my understanding is that, in that cockpit that evening, the stick shaker and the stick pusher both were engaged at some

point, right? And the—tell me your conclusion about the pilots' acquaintance with, and response to, the stick pusher.

Ms. HERSMAN. The stick pusher and the stick shaker are two different things. Once the upset started, the stick shaker was pretty much firing continuously, telling the pilot that they needed to get some additional airspeed and get the nose of the airplane down. The stick pusher actually takes action and attempts to push the yoke forward to try to get the airplane's nose down. It's the airplane almost trying to help itself. The captain never pushed forward. Once the onset of the shaker occurred, he continued to pull back, which is exactly the opposite of what he had been trained to do in response to a stick shaker. The stick shaker was giving him an approach-to-stall indication. Pilots are trained on approach-to-stall, so they should know how to respond when they get a shaker. This pilot did not respond according to his training or give any response that our investigators would have expected of him. The first officer didn't recognize what was going on and intervene or take any corrective action, such as calling "stall," and helping to push the yoke forward.

Senator DORGAN. But, I'm talking—did this pilot have adequate training on—you know, look, in the first 10 hours of instruction, when you want to get a pilot's license, you learn what a stall is and how to recover from it. That's—I mean, that's one of the most—

Ms. HERSMAN. Right.

Senator DORGAN.—basic things you learn when you learn to fly an airplane. So, it's not—it's surprising to me—not surprising to me, I guess, that in that airplane, when something happened with the airspeed and that plane began to stall, they got the stick shaker that was sounding warnings to them, and so on. But, I—what I don't understand is, Did the pilot have adequate training in both the mechanics of the shaker and the pusher? And what's your conclusion of his actions?

Ms. HERSMAN. We—

Senator DORGAN. And the training.

Ms. HERSMAN. We've made recommendations about upset training in the past. We've reiterated some of those recommendations.

There are two issues here that I want to make clear. The pilot did get the required training. One of the things that we found was that this pilot had multiple practical test failures, some in scenarios similar to the accident scenario, in which he did not respond appropriately. So, we made recommendations about multiple test failures and remedial training. His performance in the cockpit was somewhat consistent with his previous performance on past tests.

However, we've also made recommendations about improving training. We think that there's a lot of room for improvement for training in upset situations. Pilots get trained on approach-to-stall; they don't get trained in a full stall. We've made recommendations that pilots need training in that area. Simulator fidelity is improving. And we have recommended, also, in the past, based on other accident investigations, that pilots be exposed and trained to stick pusher. They are not generally exposed to that. We asked Colgan's training pilots, "When pilots were exposed to pusher, if they exposed them to it, what did they do?" And they said 75 percent of the pilots in training who might have been exposed to pusher tried

to override it, as this pilot did, which was the wrong response. We've made recommendations, in the past, to train pilots to pusher. They're not trained that way now.

Senator DORGAN. Well, your recommendations say, "Stick-pusher training was not consistently provided to pilots of the Q-400s, nor was it required by the FAA."

Ms. HERSMAN. That's true. We've made recommendations that they need to have that training; we found that they weren't trained in this situation. They were trained to shaker, not to pusher.

Senator DORGAN. Let me ask about the icing issue, if I might, because you have some comments and some recommendations on icing in your report. Can you describe them?

Ms. HERSMAN. Yes. In our investigation, we found that this aircraft did go through icing conditions, it had accumulated some ice, but it was well within its performance capabilities. The ice, the pilots were aware of, and they had addressed it, to some extent. They did make some mistakes. They didn't correlate a switch and the landing speed that they needed to do, which we found was a contributing factor. But, the aircraft was certainly capable of performance in that ice and to fly out of the stall that it was in. We did make some recommendations, however, about information about icing, to make sure that pilots are trained.

We also found that the dispatch materials that were provided to the crew did not contain required information to tell the crew what weather conditions they were facing. This has been a concern in the past. We've made recommendations, in this accident, to make sure the crew has full information. We know that they were aware of the ice, so this wasn't a causal issue in the accident, but it was an area that we identified as a concern.

Senator DORGAN. When you talk about the dispatcher, is that a dispatcher from this company?

Ms. HERSMAN. Yes. The dispatcher is a company dispatcher, but they contracted for that weather information. They weren't properly overseeing their contract to ensure that they had the right materials in the information that they provided to their pilots.

Senator DORGAN. And have you evaluated whether that is a unique condition, again, to this particular carrier in this circumstance, or is this something that may be a problem across commuter carriers?

Ms. HERSMAN. It's something that could be a wider problem, and that's why we made the recommendation to the FAA to look at this issue and address it.

I will say that the Safety Board has had concerns in the past. We've looked at other accidents where the materials that the pilots were provided were not always helpful. They get large packets. The information isn't always sorted for priority. You don't want to have the icing alert on the 40th page of the materials that you're being handed. We have looked at this issue of information and how it's presented to the pilots, in other accidents, including the Comair accident.

Senator DORGAN. So, this issue was contracted out by Colgan to a contractor, and Colgan did not oversee the contractor properly, you're saying?

Ms. HERSMAN. Yes.

Senator DORGAN. Has that been remedied?

Ms. HERSMAN. I would hope so, since it was brought to Colgan's attention. But, what we found in the accident was that it was not handled properly for this flight.

Senator DORGAN. Ms. Gilligan, when I ask, "Has that been remedied," the question is always, not "What are the rules?" but "How are they enforced?" So, do we know whether Colgan has responded to that?

Ms. GILLIGAN. I don't know, sir. I'll certainly look into whether they specifically have done so.

[The information referred to follows:]

To address concerns about provision of weather information to flight crews, Colgan Air has updated its computer system and streamlined its requirements for weather data packages. These packages, which are part of the flight release given to the captain, include departure, en route, and arrival weather.

As part of its overall surveillance of Colgan Air, the FAA is monitoring the carrier's provision of weather data to flight crews.

Ms. GILLIGAN. But, it is common for airlines to acquire the weather information that they need from official weather providers. The airlines themselves don't collect their own weather. And so, there's fairly common use of information related to weather. We will look closely at the Board's recommendation, to make sure that—either in the Colgan case, in particular, or, as you suggest, that more broadly through the system—that we don't have a risk here that has not been addressed.

Senator DORGAN. Let me ask you some questions about the issue of the major carriers and their relationship to, and responsibility for, the regional carriers.

Ms. Hersman, as I understand it, the movement in the industry toward regional carriers with smaller planes, in most cases, and having the regional carrier carry the brand of the major carrier, is a circumstance where they have a contractual relationship. But, the major carrier, in most cases, does not have responsibility for, or liability for, the regional carrier. Is that correct? Do you know the circumstances of that?

Ms. HERSMAN. I'm sorry, Mr. Chairman, can you—

Senator DORGAN. Well—

Ms. HERSMAN.—please restate your question?

Senator DORGAN. Yes, perhaps it was—as we've gone to regional carriers—and the major trunk carriers have employed the regional carriers to service part of their territory—is that relationship between the major and the regional carrier one in which the major carrier has liability for the actions of the regional carrier? Or is it a—kind of an arm's-length transaction, where the regional carrier is autonomous, although it has the colors and the brand on the fuselage of the airplane, it is not, in fact, part of, or is not the responsibility of, or the—of the major carrier, for training and many other things?

Ms. HERSMAN. I think that's a very complicated question, because there is a business arrangement, clearly, that's an arm's-length arrangement. But, then there are other relationships. That is one of the reasons why the Safety Board is holding a symposium later this year to really try to understand the structure of those re-

lationships, the performance requirements that exist, and the support that might be provided for those carriers.

They are separate entities. Colgan was a party representative in the accident investigation, not Continental. So, they are——

Senator DORGAN. Why is that——

Ms. HERSMAN.—clearly separate entities——

Senator DORGAN. Why is that the case? It was a Continental—it was called a “Continental” flight, right? The flight number——

Ms. HERSMAN. Yes.

Senator DORGAN.—was a Continental flight number.

Ms. HERSMAN. Because they are separate entities, and Colgan is responsible, and they have control of the day-to-day operations. We recognize that this is a very complex relationship, and we want to understand it better, not just for the oversight purposes, but for the aftermath of the accident. Following an accident, generally the smaller carriers, such as Colgan, don’t have the resources to provide the support to the families, and so the care teams usually come from the codeshare partner, the larger partner. We’ve seen this in other accidents. That’s one of the reasons why we want to have our symposium to identify these practices, the procedures, the best practices, these relationships. For example, if there’s a requirement for the regional carrier to have an audit, would—is that some—is that information that the mainline carrier ought to have information about?

We found, in this accident investigation, that there were two audits. There was an IATA–IOSA audit, where there were some findings, and then there was a separate Department of Defense audit of Colgan. Continental did not have that information.

Senator DORGAN. That also is stunning to me, because those airplanes are flying with Continental’s name on it. And it seems to me that Continental—in this case, Continental; we could be talking about any of the major carriers—will want to understand everything about a carrier—a regional carrier that is carrying the brand name of the major carrier.

My understanding is, both the FAA and NTSB are looking at code sharing arrangements between the regionals and the majors. So, what do you hope to determine from that effort? And what is—what’s the status at this point?

Ms. HERSMAN. We would be looking at the structures, the present practices, and oversight of both domestic and international codeshares. Certainly the FAA would be a part of the work that we would do. This symposium is designed to give us a better understanding of these relationships and to identify best practices. If there’s room for improvement, that’s what we want to focus on.

Ms. GILLIGAN. I believe you’re aware that, as a part of the Call to Action, the Administrator asked the airlines to commit to work more closely with their regional partners, and that effort has already begun. All of the majors who have codeshare partners—and not all of them do—have begun having regular meetings, generally quarterly meetings, to share the kinds of audits that the Chairman refers to, to identify shared safety risks, to share best practices.

It gets a little complicated, because there are several regional carriers who provide support to more than one of the mainlines. And what we don’t want is to have different mainlines creating dif-

ferent requirements for the same operator. So, the next step now will be to make sure that we—with FAA's participation—are refining what those expectations are, so that the regional carrier has one set of shared information.

But, this is very important. The Administrator saw that as one of the first positive steps that he could initiate, and that's already underway.

Senator DORGAN. Are there cases in which the regional carrier is wholly owned by the major carrier and, therefore, subject to identical requirements—training, and all the other requirements—of the major carrier?

Ms. GILLIGAN. All the carriers are held to the same standards, because as the Chairman points out, Colgan holds its own certificate, issued by the FAA. We provide oversight—first we determine that they meet the standard, we issue the certificate, we provide oversight to Colgan with a team from the FAA that is only assigned to Colgan. So, in that regard, they're held to the same set of safety standards. There are some regional carriers that are a part of the same corporate structure as a mainline carrier. But, from an FAA safety perspective, each certificateholder has its own responsibility to demonstrate compliance with these standards and our inspectors oversee each certificateholder.

Senator DORGAN. I understand that. I think I'm—

Ms. GILLIGAN. Oh.

Senator DORGAN. I'm asking about a slightly different approach.

Ms. GILLIGAN. I'm sorry.

Senator DORGAN. The carriers—the major carriers themselves have their own routine and their own procedures for training and a range of other employee practices. And my question was, Are there regional carriers that are wholly owned by the majors and, therefore, subject to identical practices and procedures of the major that it—that owns it?

Ms. GILLIGAN. I don't know, offhand. I can certainly find out.

[The information referred to follows:]

Several "regional" air carriers are owned by holding companies that also own "major" air carriers. Examples include American Eagle/American Airlines (AMR Corporation) and Horizon Air/Alaska Airlines (Alaska Air Group). Although these airlines are owned by a common holding company, they are separate entities as certified by the FAA. The FAA oversees each airline separately, with a separate certificate management team for each one. These airlines may share common practices, but they are not required to do so. In some cases, the procedures developed for one airline may not be appropriate for the other.

Ms. GILLIGAN. There is—

Senator DORGAN. American Eagle, for example.

Ms. GILLIGAN. Yes.

Senator DORGAN. Is that—would that not be a case?

Ms. GILLIGAN. Well, American Eagle has its own training programs and its own set of simulators, and has demonstrated that it meets all of our regulations on its own. But, I'll be glad to look at, just, whether there is a sharing of some of those training and other facilities. I'm just personally not aware.

[The information referred to follows:]

Both American Airlines and American Eagle have independent training programs, individually developed by the air carriers and individually approved by separate FAA certificate management teams. Although the simulators for American Airlines

and American Eagle are co-located at the same training facility, the air carriers do not use the same training program, because the training programs are designed to meet an individual carrier's specific operational needs and requirements.

Senator DORGAN. The larger question is—I have a list of some of the regional carriers here—Shuttle America, Pinnacle, Freedom, Chautauqua, Atlantic, Southeast, Colgan, ExpressJet Chautauqua, Trans States, GoJet, Great Lakes, Mesa, SkyWest, and the list goes on. Trans States. And the larger question from all of this is, Is there now one level of safety in this country, with the names of the carriers I have just read, as compared to the trunk carriers—or the—I should—I don't know that the—the word “trunk carrier” is a term of art these days—but, the major carriers—and I think that describes a group of carriers that are the larger carriers—is there one level of safety? I think there's supposed to be, right, dating back to the 1990s?

Ms. Hersman, do you think there is one level of safety?

And, Ms. Gilligan, do you?

Ms. HERSMAN. I think that all Part 121 carriers are required to meet the same minimum standards.

Senator DORGAN. All right, I'll respond to that and ask another question.

Ms. Gilligan, you?

Ms. GILLIGAN. It is accurate, as the Chairman has just responded. There is one set of standards for anyone who provides commercial transportation under Part 121 of our regulations. Those standards must be demonstrated by anyone who holds a certificate. FAA inspectors make the determination, that carriers meet those standards, and oversee continued compliance.

I think, Mr. Chairman, you are asking whether there are different ways to demonstrate compliance with those standards? And yes, there are. And some of those may well be more mature than in other cases. There are some carriers that are quite small. They meet the standards by demonstrating compliance through logbooks and paper records. There are some that are quite large and complex, and they have automated systems and very mature safety risk analysis processes. That's accurate. Within the system, there are some differences.

Senator DORGAN. Do you think the confluence of mistakes that occurred in the cockpit, and even prior to entering the cockpit of the Colgan flight that evening, would that confluence of mistakes be able to be found in a major carrier's cockpit, do you think? I mean—

Ms. GILLIGAN. I think—

Senator DORGAN.—we all know, now—

Ms. GILLIGAN.—to the extent—

Senator DORGAN.—that six or eight—

Ms. GILLIGAN. I'm sorry.

Senator DORGAN. Go ahead.

Ms. GILLIGAN. I think, to the extent that pilot performance is implicated, the human in the loop in this case is a part of our risk. People make mistakes. People demonstrate bad judgment. And in this case, as the Board found, the primary cause of this accident was personal and human failure. And so, yes, I think those can occur on—because humans can make those kinds of mistakes.

I think that we have provided the level of safety that we have, by having a huge number of redundancies within the system that allow us to trap those errors, most of the time, when they occur.

I believe people are making mistakes as they operate airplanes, but the airplane itself, or the second pilot, or the training that comes to bear at the right moment, help trap those errors and continue to maintain the level of safety that we expect in the system.

Senator DORGAN. But, I—I'm thinking that it is almost expected, given the way the system has developed, that we would begin to see these mistakes. I mean, it just will not surprise—it shouldn't surprise any of the three of us—that two of the people who got in a cockpit that day to fly to Buffalo, one hadn't slept in a bed for two nights, and the other hadn't been in a bed the night before. Pretty weary, pretty difficult time for them, I assume. And so, they make mistakes in the cockpit. That's not surprising. You make mistakes when you are either ill trained or when you are tired. You make mistakes.

And I'm wondering if we—if you don't agree that we're setting up a system here that is guaranteed to provide more and more mistakes. Because, as I—it is not rocket science to believe that a young woman who wants a career in aviation and has—and is living out in—I think—perhaps living with her parents out in Seattle, flying across the country at night to get to the duty station, and not having a full night's rest, is—I mean, it's not rocket science to believe that that particular pilot is more prone to mistake. And if you don't get a night's rest in a motel because you're being paid \$20,000 a year, again, it is not surprising that we see someone sitting in a crew lounge all night. It's wrong, but not surprising.

And it's not surprising to me, I guess, that we don't know anything about that subject. We just think, OK, we've got this little telescope focused on one little spot. We know what we know about that spot, and that's it. But, that is not it. This goes way beyond that. And that's what I'm trying to—I'm trying to understand how we get our arms around this.

I just think—I think this whole system has morphed into a different kind of commercial airline service, and we're kidding ourselves if we don't think some of the things that we've seen with respect to this Colgan crash aren't happening today and tonight.

Last night I was at an airport—late last night—and I saw a young pilot walk off an airplane. And I thought—and I was thinking about this hearing, because— it was a young pilot—I'm sure, somebody, you know, cares a lot about their career, God bless them; I'm sure they feel, "I'm glad I've got a job." But, this person looked bone tired, dragging that bag behind her. And I was just thinking about how little they are paid, in many cases, sitting in the second seat in a regional jet. And then we expect all the same things to exist, with respect to the rules, as exist with somebody that's flying in a 757 Dulles-to-Los Angeles nonstop, being paid, you know, \$90,000 or whatever. And the fact is, those same circumstances will not exist for that young pilot. And it's not unusual that—it's shocking to me, but, again, probably not unusual that we have found these confluence of mistakes that led to this crash.

"Pilot error" is a term that relates to so many other issues leading up to those two people getting in that cockpit, and then flying

in ice, and then making very bad judgments about how to control that airplane.

Well, I—again, I have some additional questions. I appreciate your indulgence.

We're joined by Senator Thune.

Senator Thune?

**STATEMENT OF HON. JOHN THUNE,
U.S. SENATOR FROM SOUTH DAKOTA**

Senator THUNE. Thank you, Mr. Chairman, for your focus on this subject.

On the 1-year anniversary of this very tragic crash, we continue to try and get answers, and continue to try and come up with policies that we think make sense and that will prevent anything like this from ever happening in the future. So, I appreciate the focus and attention that you've placed on this, and welcome our panel today to the Committee.

I want to follow up on an issue that I've been focused on throughout the course of the hearings that we've had on this subject, and it deals with the whole issue of pilot fatigue. And I know that, in the report, it wasn't necessarily the factor that was pointed to in this particular incident, but it does seem to me that it's a broader issue with regard to the whole debate about safety.

I'd be interested in hearing, from both of you, on how you reconcile the industry and the FAA claim that pilot fatigue and commuting need to be solely the responsibility of individual pilots. It seems, to me at least, that the safety of the passengers, both for regional carriers and large carriers, should be the overriding factor, versus self-reporting. I think it's somewhat alarming that roughly 70 percent of the Colgan pilots based in Newark commute, and 20 percent of those pilots commute from over 1,000 miles away. And so, it kind of comes back to what Senator Dorgan was alluding to.

But, give me your perspective on that, because it seems that the argument, that this ought to be solely the responsibility of individual pilots, runs clearly in the face of the testimony that I think we've had in hearings, and in listening to different comments and observations about this throughout the course of this debate.

Ms. GILLIGAN. Senator, we believe, as I think everyone does, that this issue of commuting is quite complex, and clearly one that we need to work within the industry to understand and address. The dilemma is that there's no easy solution. Someone can drive to National Airport from Fredericksburg, and I don't think any of us would think that was an unreasonable commute. But, it can run into several hours. On the other hand, someone can fly from St. Louis to National Airport and be there in an hour after having slept the night at home, in their own bed, not in a motel. So, it's complicated. If we could do it easily, we would have.

I do think you'll see, in the new rulemaking that we're putting forward, that we are asking these kinds of hard questions. What is the role of government in this kind of a question? And beyond that, what can the airline and the individual pilot be expected to do, and be held accountable to do, to perform professionally? But, it is a very difficult issue for the government, I believe, to take on, and we're looking at how we could do that.

Ms. HERSMAN. Senator, I think the issue of fatigue is very complicated. It's not just about commuting. It's about flight and duty time; it's about a medical condition, such as sleep apnea; it's about having good policies at a company, so that if a pilot is fatigued, for whatever reason, they can call in and be taken off duty, without punishment.

We've investigated accidents in the past where pilots have gotten very little sleep the night before, because they had insomnia or something else was going on, not because of their schedule. They were nervous about calling in "fatigued," because they were afraid they would lose their job. So, they flew, they made bad decisions and they had an overrun on an icy runway, they had gotten 1 hour of sleep in the past 30 for example.

Commuting is only one part of this issue. That's why the Safety Board issued our recommendation to the FAA following the Colgan accident to address this commuting issue and to look at scheduling practices. I think the challenge is to identify whether a commute is appropriate or inappropriate. I've seen a case where a pilot based in Hawaii, who lived in Florida. At some point, there are things that go beyond what makes sense for anyone to do.

I looked at that first officer in the Colgan accident, flying on a red-eye flight from Seattle to Newark with a stop in Memphis the night before the accident. I feel very uncomfortable having to perform my job after I've taken a red-eye flight, and I don't hold peoples' lives in my hand.

I think that probably all of us reasonably can say that commuting is a challenge and it needs to be addressed. It's going to take the cooperation of the FAA, the industry, and the pilot's unions to try to address it.

Senator THUNE. To the extent that you can, please comment on your rulemaking. How does it address that?

Ms. GILLIGAN. I believe the Administrator previously shared with this committee that, at this point, the rulemaking advisory committee we put together, made up of pilots and the airlines, did not make a recommendation in the area of commuting. They believe that it is a pilot responsibility, and that is the recommendation that they made to the Administrator.

We will seek additional input into that rulemaking, asking for ideas, because, as the Chairman points out, we don't have a ready solution to this. So, we are asking for comment, we are asking for the insights from the industry, both the pilots and the airlines, to see how we might go about addressing this in a reasonable and professional way.

Senator DORGAN. Would the Senator yield on that, please?

Senator THUNE. Yes.

Senator DORGAN. I believe there are some cargo companies that have a ready solution for it, right? I mean, there are cargo companies that have commuting pilots that pay for their pilot's motel room when they show up for their duty station the night before the flight. Is that not correct?

Ms. GILLIGAN. There is, I believe, one that does that. There is also a cargo carrier that provides rest facilities, at some of their locations, that are temperature controlled and lighting controlled, and those kinds of things. So, there are some options that have

been implemented by some in the industry. We want to understand those, and we want to see how those might be able to be applied more broadly throughout the industry.

Senator THUNE. Well, it just seems like the example of a pilot who lives in Hawaii and operates out of Florida—it—just as a practical matter. Hopefully that's an outlier, but at some point, it seems like practical considerations would come into play here.

I understand there's a balance you have to strike, and you've got to try and find what makes the most sense. Clearly, common sense too, would seem to be a consideration here, but, I think people push themselves, and they do things that they probably shouldn't do and put themselves in situations where they are fatigued. That's an issue that, I think, needs to be addressed. I hope that the process that you're undertaking right now can get at that, and perhaps use some of the ways in which the cargo carriers are dealing with this issue as an example of how to best address it.

But it seems to me, at least right now, that we've got a problem, and it needs to be addressed.

Ms. GILLIGAN. We agree, sir. And I think, to the Chairman's point, there is a role for everyone in this—the airline, the pilot, and the government. And we're trying to understand those roles and responsibilities—how to best describe those—so that everyone holds each other accountable. The airline should be determining that their crew is competent and ready to fly. The individual pilot should be able to report if he or she is not. The copilot or others on the crew should be ready to report if they are concerned that there is a member of the crew who is not ready to take that flight. So, there are roles and responsibilities here for all of the parties.

Senator THUNE. OK.

Thank you, Mr. Chairman.

Senator DORGAN. Let me—I'm going to ask about pilots' qualifications and hours. But, first I want to ask about the issue of pilot experience in icing.

You are aware that the second officer says that she had, really, no experience with icing. Senator Thune and I—I've not talked to Senator Thune about this, but I assume that he—as have I, been in a lot of small planes, where we shine flashlights on the wings to find out how much rime ice has developed. In our part of the country, it is not unusual to fly and have some icing as you go up or come down in a charter flight.

But, this is a copilot who speaks about icing. She says, "I have 1,600 hours," she says, "I have 1,600 hours, all of that in Phoenix. How much time do you think, actual, I had, or any, in ice? I had more actual time on my first day of IOE than I did in my 1,600 hours when I came here." And then she says, "I've never seen icing conditions. I've never deiced. I've never seen any—I've never experienced any of that. I don't want to have to experience that and make those kind of calls. You know, I freaked out. I'd have, like, seen this much ice and thought, oh my gosh, we're going to crash."

So, I want, Ms. Hersman, for you—the NTSB, I assume, has analyzed this. What kind of icing experience did this copilot have? And this is a plane—this is a dash-8 with, I assume, hot props and boots on the wings—flying in the winter, in icing conditions, in the Northeast. That's where this pilot was assigned. And at least on

the voice cockpit recorder, this copilot is saying, "I've never seen any of this, and have no experience with it."

Your investigation of that?

Ms. HERSMAN. Chairman Dorgan, when the first officer is talking about that on the cockpit voice recorder, she's reflecting back to when she first started at Colgan. She came from Phoenix, and she had not had a lot of time in winter weather conditions. She's talking to the captain, telling him, "I got more time in my Initial Operating Experience in my first days on the job at Colgan in ice than I'd had in my entire career." And then she goes on to talk about captain upgrades, that in the first year when she was with the company, that a lot of people were upgrading to captain early, and that she was glad that she didn't have to upgrade to captain early, because she had not had a lot of experience in icing conditions and she would not have wanted to make those decisions that you reference. She's reflecting back, saying, "If I had had to operate in conditions like this in my first year, and upgrade to captain, I would have been very uncomfortable."

Since she was employed with Colgan, she did operate in winter weather conditions, and she had accumulated over 2,200 hours. She did have exposure to winter weather conditions and the kind of environment she was flying in the night of the accident while she accumulated those additional hours at Colgan.

But, I think your point is, is that—

Senator DORGAN. That may be the right—

Ms. HERSMAN.—when she first came—

Senator DORGAN. Yes, that—

Ms. HERSMAN.—that when she first came, she didn't have a lot of experience. That's—

Ms. GILLIGAN. Right.

Senator DORGAN. That may be the right interpretation of her second comment, I don't know.

Ms. HERSMAN. Yes.

Senator DORGAN. But, her first comment suggests that she saw more ice in her first day than in her—flying in that area—than her entire previous 1600 hours.

Ms. HERSMAN. Yes.

Senator DORGAN. So, you put someone with 1600 hours in a cockpit and say, "Go fly," and fly into ice—what she seems to have been saying to the captain is, "I was put out here with almost no experience in icing." Is that what you hear?

Ms. HERSMAN. Yes. That's something that the Safety Board has been concerned about. In the past, we have made recommendations about training, certainly in the aircraft type and in the conditions that a pilot is going to be exposed to. In our investigation of the Montrose, Colorado, accident that involved Dick Ebersol's family, we found, that the pilot and the captain had a high number of hours but when we looked back at his experience and found that in the previous 4 years even though he'd flown about 18 times in the northern half of the U.S.—he hadn't been in icing conditions.

There are definitely challenges about making sure that people are prepared for the conditions that they're flying in, and that's why it's important for the carrier, depending on what environment they're operating in—it may be a challenging airport, it may be

challenging weather conditions—they need to make sure that their crew is appropriately trained for those conditions.

Ms. GILLIGAN. And sir, if I might just clarify. She did receive training from Colgan in icing and what the characteristics of the aircraft are, and how to respond to it. In addition, the Initial Operating Experience is a regulatory requirement. She must be paired with an experienced pilot or a check airman for her Initial Operating Experience, for this very purpose, to make sure the transfer of knowledge has occurred. So, in those early flights she was accompanied by or assigned to an experienced pilot who would have been evaluating whether, in fact, she had had the proper transfer of knowledge to be able—

Senator DORGAN. Could that happen with passengers in the back of the plane?

Ms. GILLIGAN. It is with passengers, sir.

Senator DORGAN. See, I'm not—

Ms. GILLIGAN. It is her Initial Operating Experience.

Senator DORGAN. See, I'm not sure—I don't agree that the first flight—the first experience you might have with icing should be in a cockpit where you're carrying passengers.

Ms. GILLIGAN. Well, her training would have occurred in simulator.

Senator DORGAN. I understand that, but I'm talking about experience in the air. There's no—I've been in the simulator—there's no ice in the simulator. I understand the value of a simulator, and so on—

Ms. GILLIGAN. Right.

Senator DORGAN.—but actual experience flying through icing, if—what you're saying is, they are trained, then put in a cockpit in the second seat, and—but always the person in the first seat has good experience. You know, this is their first experience with icing—under the supervision of someone who has been there, but what if something happens to the captain? The purpose of the copilot is to take over, and this is their first flight with—first experience in icing, and they've got passengers in the back. I mean, I think that's—I don't know. I—

Let me also ask a question, before I talk about pilot qualifications. I'm looking at the transcript here, and—22, 13, 58—the last sound in this cockpit—minutes later, there is still discussion about the career. And it relates to this question of a sterile cockpit. What are the requirements with respect to a sterile cockpit?

Ms. Gilligan?

Ms. GILLIGAN. The regulatory requirement is that they should maintain sterile cockpit below 10,000 feet. And that means that the exchange of information should be related only to the operation of the aircraft so as to complete the approach into the arriving airport.

Senator DORGAN. Let me ask about ATP license. Is it an ATP “license”?

Ms. GILLIGAN. An Airline Transport Pilot certificate, yes, sir.

Senator DORGAN. Certificate. ATP certificate.

Tell me about the ATP certificate, and what the requirement is for its use. How does one achieve one?

Ms. GILLIGAN. The Airline Transport Pilot certificate is the highest rating that FAA issues. It is accomplished after someone goes through the steps of private pilot certificate, instrument rating, and commercial pilot certificate. They often get instructor certificates, as well. And at each level, from private to commercial to airline transport pilot, we have increasing requirements for both the number of hours of experience as well as training and other kinds of experiential learning, and those kinds of things.

Senator DORGAN. And what gross hour—are there any gross number of hours—

Ms. GILLIGAN. Yes.

Senator DORGAN.—that are required to get an ATP?

Ms. GILLIGAN. Yes. It's a minimum 1500 hours.

Senator DORGAN. So, a minimum of 1500 hours. All right.

What is the requirement for a—the hiring of a captain or someone in the right seat, a copilot, on the major carriers or the commuter carriers?

Ms. GILLIGAN. The rules permit—

Senator DORGAN. Regional carriers.

Ms. GILLIGAN. The rules permit anyone with a commercial pilot certificate to be able to be compensated for flying. So, anyone with a commercial pilot certificate is eligible to be hired into commercial service. For a commercial pilot certificate, a minimum of 250 hours is required.

Senator DORGAN. And what is the common purpose of, and the requirement for, an ATP license, then? In other words, if you—you can fly a charter flight or get hired by a regional airline or a major carrier with, let's say, 300 hours.

Ms. GILLIGAN. Right.

Senator DORGAN. What is the function of, and the purpose of, an ATP?

Ms. GILLIGAN. To serve as pilot in command in that operation, you must have an Airline Transport Pilot certificate. The purpose of that was to assure that there would be pilot-in-command responsibilities assigned to someone who has demonstrated the ability to take on that additional responsibility.

Senator DORGAN. Is that true for all of commercial airline—is that true for all of the flights that exist on a commercial airline? The pilot in command must have the 1500 hours and the ATP license?

Ms. GILLIGAN. For all scheduled—

Senator DORGAN. Or certificate, rather?

Ms. GILLIGAN. For all scheduled passenger carriage, yes, that's correct.

Senator DORGAN. So, everyone in a left seat for all scheduled—Senator Thune, did you have any other questions? I wanted to make sure you—all right.

So, it is true, for all scheduled commercial flights, that the person sitting in the left seat will have an ATP?

Ms. GILLIGAN. Yes, sir.

Senator DORGAN. And have a minimum of 1500 hours.

Ms. GILLIGAN. Yes, sir.

Senator DORGAN. All right. And what is the requirement, generally speaking, for the person in the right seat?

Ms. GILLIGAN. Again, that pilot may have a commercial pilot certificate. Airlines can set different requirements. But, by regulation, in order to be paid, you must have at least a commercial pilot certificate.

Senator DORGAN. And that's the 250 hours.

Ms. GILLIGAN. 250 hours minimum.

Senator DORGAN. And you say different airlines set different requirements. Can you tell me about some of those carriers and requirements? Are there some carriers that say that everyone who steps in a cockpit of ours should have an ATP?

Ms. GILLIGAN. I'm not familiar with any that have that requirement, but carriers set their requirements based on what their hiring pool permits. And so, many of the carriers require more experience than what the regulation permits. And pilot——

Senator DORGAN. Ms. Hersman——

Ms. GILLIGAN. I'm sorry?

Senator DORGAN. Go ahead.

Ms. GILLIGAN. No, I'm just saying, pilots build that experience through flight instruction or other commercial kind of operation, whether it's spraying crops or doing some charter work, as you suggest. They build additional time, beyond the 250 hours, for the purposes of being hired into those commercial positions.

Senator DORGAN. Ms. Hersman, do you want to comment on the issue of ATP license and the practice of requiring only a commercial license for the right seat? Has that played a role, in your judgment, in anything that you have investigated?

Ms. HERSMAN. The Safety Board investigated events in which things went wrong, and so, we don't always have a control group about what went right. We've investigated accidents where we've seen very high-time pilots, and we've also investigated accidents where we've seen low-time pilots.

We don't have any recommendations about the appropriate number of hours for different categories. We see that they do have different standards. As Ms. Gilligan referenced, some might use 250, some may have higher standards, require 600 hours, 800, 1,000.

We do know that there is a correlation, from our accident investigations and some studies we've done, between individuals who fail practical flight tests, and their potential likelihood to be involved in an accident later, but we don't have any data supporting the number of hours for a certificate, or its correlation with being involved in an accident.

Senator DORGAN. Would that data be useful? You don't have it just because you don't have it, or you don't have it because you've never felt the need to go look for it, or—I mean, I guess I'm asking the question, Is there something here we should know? And I don't know the answer to it.

But, it does seem to me that someone with 250 hours is—has dramatically less experience than someone with 4,000 hours. And someone with 250 hours has substantially less experience than someone with 1,500 hours. And the question, I suppose, is—and I don't know the answer—is, If there is a regional carrier out there that is hiring someone, for the right seat, who has a 280 hours, received a commercial license, has the capability to be hired, because—meets the minimum requirement—is—what does that air-

line do, then, to further prepare that pilot? Or is that pilot put in the right seat and able to fly around with passengers in the back, and gain experience by sitting next to a skilled captain?

So, Ms. Gilligan—

Ms. GILLIGAN. Right.

Senator DORGAN.—can you tell us your impression of what's happening—

Ms. GILLIGAN. Our—

Senator DORGAN.—in the real world?

Ms. GILLIGAN. Yes, sir. Our impression is quite clear, that we are concerned as to whether or not those are sufficient criteria. That's why the Administrator had us already issue an Advance Notice of Proposed Rulemaking, asking those—

Senator DORGAN. Right.

Ms. GILLIGAN.—particular questions. Should there be a difference in hours? Should there be a different kind of certification for a commercial pilot who is operating in Part 121 passenger-carrying service. It may well be a gap. We'll see what the response is to our rulemaking, and we will take appropriate action, because it is an area of concern to all of us.

Senator DORGAN. And that rulemaking is welcomed by the Congress. But, you know, as we all understand, the rulemaking process takes too long, it's difficult, it's—you know, we've—Administrator Babbitt was here—has been here twice—and I know they had set, originally, a—on—I think it was on the fatigue issue—the December timeline, and that is now, I believe, March.

Can you tell us what the new timeline is on the work you're doing in that area?

Ms. GILLIGAN. That rule is in executive review with the Department of Transportation. After that, we will also consult with the Office of Management and Budget. But, we have a package that is, we believe, complete, and as soon as that is through executive review, we'll publish that for comment.

Senator DORGAN. And—but, that includes—it has—you'll publish for comment—

Ms. GILLIGAN. Yes, sir.

Senator DORGAN.—after OMB passes on it?

Ms. GILLIGAN. Yes, sir. It'll go out for public comment in the standard process.

Senator DORGAN. Yes. Well, that's a—I mean, OMB is—as you know, is a major problem, because things go into OMB that no human being ever sees again.

Ms. GILLIGAN. The Administrator is quite dedicated to this project. I'm certain that—

Senator DORGAN. Right.

Ms. GILLIGAN.—we'll see this project.

Senator DORGAN. All right. I mean, I think there's an urgency here that needs to be reflected in the actions of the FAA. I appreciate that—new administrator. I think he is taking some action that has not previously been taken. But I—I do think there's an urgency on the fatigue issue, there's an urgency on the issue of qualifications. We need to get at this.

And my own view of this tragedy is, I think it's very unlikely that we are seeing a series of about eight—eight significant prob-

lems that existed on this flight, that is unique only to this flight. I think that's very unlikely. I think we would be very unwise if we didn't understand the consequences of these actions, the consequences of pilots that are flying without enough rest. It's very serious. That's what relates to pilot error. The consequences of the lack of adequate training or the consequences of the lack of adequate credentials and, you know, the consequences of not having liability existing between those who have rented their name out to a regional carrier. You know, all of these things together—and there are more, but it—there are just so many of them that have come to the front here on this issue that it just literally demands that we say, “You know what? Things have changed dramatically in the commercial aviation sector, and we have to make changes to respond to it.”

If you go back three decades, there were not many regional carriers at all. Just—I mean, we—you know, and my State's a good example. We basically had the major carriers coming in and picking people up in a hub-and-spoke system, taking them to a hub, and moving out of the hub. That's just the way it all worked. That has morphed into something that is completely different.

We now have the same major carriers' brands and colors and logos on different airplanes run by different companies—smaller companies and younger companies, newer companies. And I think this—the question of whether there is one level of safety is a question that is fairly easily answered these days. The answer is no. We're not quite measuring up with the same level of safety with this new area of regional carriers.

I'm not saying they are unsafe as a group, but I am saying I think that people that get into airplanes, where, in the cockpit, there is dramatically less experience than they are—they would have, getting onto an airplane on a 757 flying Dulles to Los Angeles—it just makes sense for us to understand, if you're getting into an airplane where someone in the cockpit's being paid \$18- or \$20,000 a year, they are going to be somebody with substantially less experience, as well, as opposed to the kind of pilots you would expect in other circumstances.

So, I think all of these things together tell us that we'd better get moving here and understand that things have changed in this industry, and we need to understand the implications of those changes, and respond to those implications.

And I'm not—again, you know, I don't want to scare people. I think we have a circumstance of safety that is admirable. This is an industry that has a pretty remarkable safety record. But, that record is of no consolation to those who lose loved ones in a tragic accident that should not have happened, and could have and should have been prevented.

So, let me say, Ms. Hersman, I've really appreciated and—more than ever—the work of the NTSB. I've watched NTSB folks come on television and explain things in the news cycle and—haven't paid as much attention as I should have to the way the NTSB works, and the work that is done there. I appreciate your work. These 300 pages, I hope, is now a clarion call to substantial change, and is the roadmap to making those changes.

And, Ms. Gilligan, again, I'm going to be appreciative of Administrator Babbitt, but, in the weeks and months ahead, unbelievably nettlesome about wanting to make sure we get things done on time. You've—and let me help you with OMB, if I can. They're very fond of me.

[Laughter.]

Senator DORGAN. And I do know that it's difficult to get things through OMB, but it's even been more difficult in the past to get something out of the FAA, so with a new administrator and a new approach, I want the FAA to work, I want our government to work, and I want Ms. Hersman's most-wanted list not to be ignored. I want them to be implemented, and implemented post haste.

Let me thank both of you for spending part of your morning with us. And this discussion will continue throughout this year as we try to see if we can implement some changes that will provide an added margin of safety in our commercial airline sector.

This hearing's adjourned.

[Whereupon, at 11:06 a.m., the hearing was adjourned.]

A P P E N D I X

PREPARED STATEMENT OF HON. FRANK R. LAUTENBERG,
U.S. SENATOR FROM NEW JERSEY

One year ago, after taking off from Newark Liberty International Airport, Colgan Flight 3407 crashed outside Buffalo, taking the lives of 50 people.

The crash was a horrible and deadly reminder that we have more work to do to make sure that when passengers board a commercial aircraft, they have pilots that are well rested, well trained, and ready for any task that is put before them.

Whether passengers are flying a regional carrier from state to state or a major carrier from continent to continent, planes must be equally safe and the crews should be performing at an equally high standard.

That means we need to have—and enforce—consistent safety and training standards across the board. Tragically, that was not the case with Colgan Flight 3407.

The National Transportation Safety Board has concluded its investigation of the Colgan Flight 3407 crash. In its findings, the NTSB revealed that the aircraft's pilots were ill-trained and unprepared to meet the demands of their mission, as well as possibly too fatigued to fly.

Pilot fatigue is not a new issue. The NTSB first called on the FAA to update the flight and duty time rules for pilots in 1990 and has renewed that call in the wake of this deadly crash. The current FAA flight and duty rules have not been updated for over fifty years. I urge FAA Administrator Babbitt to put in place a rule that is scientifically-based and takes into consideration the demands facing today's pilots.

Furthermore, all airlines—regional and mainline carriers alike—have a responsibility to ensure that all of their pilots are trained and ready to take the controls before they step on-board any aircraft. And all airlines must guarantee that every pilot is not only trained to complete their mission, but also getting enough pay and rest. There are far too many examples of pilots stretched beyond their capabilities because of inadequate rest and compensation.

The millions of passengers that fly everyday deserve an efficient, comprehensive transportation network where safety comes first.

Our aviation system is safe, but the tragedy of Colgan Air Flight 3407 serves as a stark reminder that we cannot be complacent when it comes to our aviation safety.

You can be sure that I, and this committee, will continue to work to keep our aviation system the safest in the world.

Thank you.

NATIONAL TRANSPORTATION SAFETY BOARD—OFFICE OF THE CHAIRMAN
Washington, DC, April 6, 2010

Hon. BYRON L. DORGAN, Chairman,
Hon. JIM DEMINT, Ranking Member,
Subcommittee on Aviation Operations, Safety, and Security,
Committee on Commerce, Science, and Transportation,
U.S. Senate
Washington, DC.

Dear Chairman Dorgan and Ranking Member DeMint:

Thank you for providing the transcript of the hearing of the Subcommittee of February 25, 2010, on the crash of Colgan Air Flight 3407 for review and correction. Although most of the corrections are minor, I would like to take this opportunity to draw your attention to a substantial correction of the record.

During the question and answer portion of the hearing, I stated that Colgan Air did not share the findings and recommendations of the International Air Transport Association (IATA) and the Department of Defense (DOD) safety audits with its

code-share partner, Continental Airlines. Following the hearing, it was brought to my attention that I misspoke on this particular point.

In fact, Colgan Air did share the IATA and DOD audits with Continental Airlines. However, the audit information was not shared with the Federal Aviation Administration. In his statement provided to our investigators, the principal operations inspector for Colgan Air stated that the FAA did not get copies of these audits. We noted this directly in our report where we stated that “the Colgan POI stated that he was aware of these audits but did not get a copy of the reports, which prevented him from having a comprehensive understanding of the reports’ findings.”¹

I regret my error regarding who received copies of the audits and appreciate the opportunity to correct the record.

Sincerely,

DEBORAH A.P. HERSMAN,
Chairman.

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. FRANK R. LAUTENBERG TO
HON. DEBORAH A.P. HERSMAN

Question 1. The First Officer of Colgan Flight 3407 earned a base salary of around \$20,000. The salary of Captain Sullenberger, the veteran pilot of U.S. Airways Flight 1549, also known as the “Miracle on the Hudson,” was cut 40 percent in recent years, forcing him to take a second job. Given all of the responsibilities that commercial pilots shoulder, do you consider low pilot pay a safety issue?

Answer. The NTSB has not systematically studied whether pilot pay is a safety issue. Historically, accidents and incidents have not been limited to pilots new to the industry earning entry level wages. The NTSB is concerned that cost of living at some bases can affect a pilot’s ability to live nearby or identify suitable accommodations. The NTSB discussed this issue in its Colgan Flight 3407 report and issued a recommendation. Specifically, recommendation A–10–16 asks the FAA to address fatigue risks associated with commuting, including identifying pilots who commute, establishing policy and guidance to mitigate fatigue risks for commuting pilots, using scheduling practices to minimize opportunities for fatigue in commuting pilots, and developing or identifying rest facilities for commuting pilots. However, it is important to note that although their wages were different, the pilots for both the Colgan and the U.S. Airways accidents were commuters. Therefore, low pilot pay is not the only driver of the safety issue addressed (commuting) in the NTSB’s recommendation. The extent to which pay affects other aspects of pilot performance has not been determined in our investigations.

Question 2. Regional airlines operate half of all domestic departures and move more than 160 million of our Nation’s passengers each year. If we are to have one level of safety for both regional and major network carriers, shouldn’t the pilots of regional carriers be trained and compensated at the same level as pilots for major network carriers, particularly if they are flying identical routes?

Answer. In 1997, the FAA required what were then known as commuter airlines to conform to the certification standards of 14 CFR Part 121, which applies to major airlines, and to thereby achieve one level of safety throughout the airline industry. The Colgan investigation revealed low levels of pilot experience, inadequate training records, non-existent remedial programs, and immature safety programs as well as strained FAA oversight resources at that airline. Even though airlines are now regulated to the same minimum standards, it appears that not all airlines are equal. The NTSB will examine code share safety standards later this year in a symposium. As to compensation at regional carriers, bargaining methods between pilots and companies are long established and outside the scope of our investigation.

Question 3. One airline has a program where pilots that commute long distances to their duty station are provided with free air travel, as well as hotel accommodations at their assigned station. This is in stark contrast to the First Officer of Colgan Flight 3407, who had to commute from Seattle to Newark flying stand-by on a “red-eye” flight. In the wake of the Colgan crash and other fatigue-related incidents, what should airlines be doing to provide a stable, predictable commute and proper accommodations for their pilots?

Answer. The NTSB believes that airlines need to take action to identify and understand the extent to which commuting affects the safety of their operation. In its

¹“Loss of Control on Approach, Colgan Air, Inc., Operating as Continental Connection Flight 3407, Bombardier DHC–8–400, N200WQ, Clarence Center, New York, February 12, 2009,” Accident Report of the National Transportation Safety Board, NTSB/AAR–10/01, at page 137.

report on the Colgan Flight 3407 accident, the NTSB issued Safety Recommendation A-10-16 which asked the FAA to “address fatigue risks associated with commuting, including identifying pilots who commute, establishing policy and guidance to mitigate fatigue risks for commuting pilots, using scheduling practices to minimize opportunities for fatigue in commuting pilots, and developing or identifying rest facilities for commuting pilots.”

Question 4. The Captain of Flight 3407 failed five proficiency tests before he was hired—a fact he never disclosed to Colgan. At what point should the FAA revoke a pilot’s license for failing proficiency or training tests?

Answer. Certificate revocation is a punitive enforcement action which is not appropriate for training failures. However, the NTSB believes that complete disclosure of a pilot’s certificate history and any prior training problems is an essential part of the commercial pilot employment process. In addition, air carriers and commercial operators must maintain detailed, accurate training records and must proactively address pilot proficiency issues as they occur, and the FAA must aggressively police such issues.

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. JOHN D. ROCKEFELLER IV
TO MARGARET GILLIGAN

Question 1. The problems experienced with the FTI programs—specifically outages in key components of the FAA’s communication systems—raises concerns about the agency’s ability to implement large modernization projects in a timely and cost-effective manner. What steps are you taking to ensure the FAA has the capacity to effectively manage the modernization programs in cost-effective manner?

Answer. We agree that Air Traffic Control modernization programs require proper management and oversight to ensure success. Over the years, the agency has taken major steps to ensure that modernization is managed in an effective manner and we have successfully fielded multiple new systems into operation throughout the country, including new air traffic displays, runway safety systems, and weather processing systems. In addition, we have met our cost and schedule goals for modernization programs for the past 5 years.

In January 2009, the Government Accountability Office (GAO) recognized the major improvement in FAA’s management of Air Traffic Control Modernization and removed the FAA from the GAO’s High Risk List.

In removing the FAA from the High Risk List, the GAO determined that the FAA had addressed weaknesses in managing modernization and that FAA executives, managers, and staff had demonstrated a strong commitment to—and a capacity for—resolving risks. The GAO recognized the FAA for: (1) improved management capabilities on major projects; (2) development of an enterprise architecture—a blueprint of the agency’s current and target operations and infrastructure; (3) implementation of cost estimating methodology and a cost accounting system; (4) implementation of a comprehensive investment management process; and (5) assessment of human capital challenges and plans to address critical staff shortages.

Question 2. Do you have the personnel with the expertise to manage these complex modernization projects?

Answer. Yes. In fact, the FAA requires program managers for major acquisition programs to be certified program managers, which means they have the education, training, experience and demonstrated competencies to manage complex systems acquisition. FAA’s certification standards exceed the Federal Acquisition Certification for Program and Project managers.

Additionally, the FAA began publishing the Acquisition Workforce Plan in 2009. This plan is updated annually and focuses on the technical and acquisition workforce that is engaged in the design and development of mission critical National Airspace System (NAS) systems, including program managers, engineers/system engineers, business and financial analysts, contracting officers and specialists; Contracting Officer’s Technical Representatives (COTRs); and other specialized support disciplines. The Acquisition Workforce Plan serves as FAA’s guide for workforce hiring and development, to ensure FAA maintains the staffing and skills needed to successfully manage complex modernization projects.

The FAA has also recently taken the following actions to strengthen the management skills of FAA acquisition personnel and meet the challenges of complex modernization programs:

- Established the Acquisition Career Management (ACM) Group to institutionalize these efforts. For example, the ACM monitors the Agency’s overall certification compliance.

- Strengthened the overall governance of the Acquisition Workforce and the management practices by establishing both an Acquisition Workforce Council (AWC) and an Acquisition Executive Board (AEB). The AWC provides oversight for the development and implementation of acquisition workforce development strategies and the AEB oversees the complete institutionalization of acquisition management practices. The two entities work closely to ensure the FAA meets its objectives for establishing and maintaining a well-trained acquisition workforce.
- Building the skills and talents of its Acquisition Workforce through career management programs for contracting officers, COTRs, Program Managers, Systems Engineering, Systems Test and Evaluation, Cost Estimating, and Procurement Attorneys. The programs define competency requirements for each role and related curricula and training to support skills and competency development. FAA policy requires certification for acquisition program managers, Contracting Officers, and COTRs.
- Strengthening practices used to develop and implement acquisition programs with the introduction of Acquisition Management Practices toolkits that were developed by FAA subject matter experts and are based upon industry best practices. They contain practical guidance for implementing the FAA's Acquisition Management System (AMS).

Question 3. The recent Northwest Airlines flight that overflew Minneapolis was quite alarming. The hand-off of the plane between air traffic controllers raises questions about procedures that (are) in place to track aircraft as they transit the national airspace. What steps is the FAA taking to make certain that hand-offs between controllers do not delay responses to potential problems with aircraft?

Answer. The FAA's investigation of the incident involving Northwest Airlines flight 188 (NWA 188) resulted in several recommendations to improve awareness, communications and internal notification procedures to the FAA's domestic event network (DEN). A workgroup, including representatives from the FAA and National Air Traffic Controller Association (NATCA) was formed to implement those recommendations.

The workgroup developed changes to FAA orders to require that the communication status of aircraft be included in the information exchanged when responsibility transfers from controller to controller. FAA orders are also being amended to require the usage of available methods to provide a visual indication to controllers of the communication status of an aircraft. The revised orders are currently in coordination and will be effective in the third quarter of FY 2010.

In addition, training was developed based on the NWA 188 incident highlighting radio communication status and notification procedures when communication is lost. This training was implemented in February 2010.

The FAA is researching the feasibility and options for providing a visual indication of the communication status of aircraft to controller displays. We expect to complete the research by September 30, 2010.

RESPONSE TO WRITTEN QUESTION SUBMITTED BY HON. BYRON DORGAN TO
MARGARET GILLIGAN

Question. Administrator Babbitt's Call to Action took a number of important first steps to address the safety risks that came to light as a result of the crash of Flight 3407. The DOT IG, however, recently noted that many of the Call to Action initiatives have fallen behind the FAA's self-imposed deadlines. Further, the DOT IG has criticized the FAA for failing to impose clear deadlines or milestones for the implementation of the voluntary programs by air carriers and labor unions. What is the FAA currently doing to make certain that the Call to Action initiatives do not fall behind schedule and are implemented in the near future?

Answer. We have already completed a number of the initiatives developed through the Call to Action meetings. Specifically, the FAA has completed a two-part focused review of air carrier flight crewmember training, qualification and management practices. The FAA inspected 85 air carriers to determine if they had systems to provide remedial training for pilots. Based on the information from these inspections, the FAA has finalized a Safety Alert for Operators (SAFO) with guidance material on how to conduct a comprehensive training program review in the context of a safety management system (SMS) and publication of this SAFO is imminent. A complementary Notice to FAA inspectors will provide guidance on how to conduct surveillance.

We have also obtained commitments from air carriers and pilot employee organizations for voluntary implementation of best practices. With respect to voluntary

programs such as Flight Operations Quality Assurance (FOQA) and Aviation Safety Action Programs (ASAP), the Call to Action has encouraged greater participation. Since we launched the Call to Action initiative, the FAA has approved 12 new FOQA programs. Three air carriers that had no ASAP program have now established them. Four more air carriers have established new ASAP programs for additional employee groups.

Since the issuance of the final report on the Call to Action, we have also published an ANPRM seeking recommendations from the public on enhanced certification and training requirements for pilots who fly passenger aircraft. In addition, the FAA has continued to consult with pilot employee organizations on practical ways to facilitate transfer of experience, or mentoring, in a structured way. We have also completed a survey to follow up on the results of our focused inspection initiative. This survey revealed additional improvement in the number of carriers who have remedial training programs. At the beginning of our efforts, 15 carriers had partial remedial training programs and 8 had none, but as of last week, 93 of the 95 carriers with active certificates have complete remedial training programs and the remaining two have partial programs.

To ensure that we continue to follow through on the Call to Action initiatives, we have very aggressive time frames for the two rulemaking projects. The draft Notice of Proposed Rulemaking on Flight Duty and Rest is currently in executive review. Although we have not met our target timeline, this rule is being developed on an extremely expedited schedule with the utmost commitment from the rulemaking team. Similarly, the supplemental NPRM on crew training requirements has been drafted and is in the review process.

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. FRANK R. LAUTENBERG TO
MARGARET GILLIGAN

Question 1. The First Officer of Colgan Flight 3407 earned a base salary of around \$20,000. The salary of Captain Sullenberger, the veteran pilot of U.S. Airways Flight 1549, also known as the “Miracle on the Hudson,” was cut 40 percent in recent years, forcing him to take a second job. Given all of the responsibilities that commercial pilots shoulder, do you consider low pilot pay a safety issue?

Answer. The FAA’s role is to set the standard that pilots must meet in order to fly for a commercial air carrier. Although we do not presently have data regarding a correlation between aviation safety and pilot pay, on October 16, 2009, the Department of Transportation, Office of Inspector General (OIG) announced that it planned to begin a review to identify and assess trends in commercial aviation accidents including correlations between pilot experience and compensation. We look forward to the OIG’s findings and will review the results of this audit.

Question 2. Regional airlines operate half of all domestic departures and move more than 160 million of our Nation’s passengers each year. If we are to have one level of safety for both regional and major network carriers, shouldn’t the pilots of regional carriers be trained and compensated at the same level as pilots for major network carriers, particularly if they are flying identical routes?

Answer. The FAA holds all airmen certificated at the commercial pilot level and all airmen certificated at the airline transport pilot level to the same regulatory standards whether they work for a regional or a mainline carrier. As discussed in the response to question five, although we do not presently have data regarding a correlation between aviation safety and pilot pay, on October 16, 2009, the Department of Transportation, Office of Inspector General (OIG) announced that it planned to begin a review to identify and assess trends in commercial aviation accidents including correlations between pilot experience and compensation. We look forward to the OIG’s findings and will review the results of this audit.

Question 3. One airline has a program where pilots that commute long distances to their duty station are provided with free air travel, as well as hotel accommodations at their assigned station. This is in stark contrast to the First Officer of Colgan Flight 3407, who had to commute from Seattle to Newark flying stand-by on a “red-eye” flight. In the wake of the Colgan crash and other fatigue-related incidents, what should airlines be doing to provide a stable, predictable commute and proper accommodations for their pilots?

Answer. Each air carrier has a responsibility to establish commuting policies and guidelines appropriate to its individual operational environment. However, the greater issue at hand is that of professionalism. As supported by the Aviation Rulemaking Committee (ARC), which provided recommendations on how the U.S. should modify its existing fatigue rules, each air carrier is responsible for ensuring that it

does not use a fatigued crewmember. Likewise, crewmembers have a professional responsibility to use a rest opportunity for sleep, and to be fit for duty.

Question 4. The Captain of Flight 3407 failed five proficiency tests before he was hired—a fact he never disclosed to Colgan. At what point should the FAA revoke a pilot's license for failing proficiency or training tests?

Answer. The captain of Flight 3407 was disapproved on three flight checks prior to his employment with Colgan (initial check rides for instrument rating, commercial single-engine land, and commercial multi-engine land). He was also disapproved on his initial check ride for an airline transport pilot certificate while employed by Colgan. Colgan training records show that, during his service as a first officer, the captain needed additional training on certain procedures in the Saab-340 aircraft he was flying at the time.

The FAA does not revoke pilot certificates for failure of proficiency checks or training events. Given the number of training and checking events that occur during the course of a normal professional flying career, one or more check ride failures is not in and of itself a reason to revoke a pilot's certificate. However, the FAA has encouraged airlines to conduct a full review of a pilot applicant's records in order to make an informed decision. The FAA also encourages airlines to make a trend analysis on failure elements. The repetitive failure of a single crewmember, or the failure of several crewmembers during proficiency or competency checks, may indicate a training program deficiency.

