**Docket No. SA-538**

**Exhibit No. 2-C**

# NATIONAL TRANSPORTATION SAFETY BOARD

**Washington, D.C.**

Attachment 2 – Louisville Interview Summaries
(113 Pages)

# NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Washington, D.C. 20594

February 1, 2014

## Attachment 2 – Louisville Interview Summaries

# OPERATIONAL FACTORS

**DCA13MA133**

**Table Of Contents**

## A. LOUISVILLE INTERVIEW SUMMARIES

### 1.0 Interviewee: Luis Roman Corrons, UPS A300 Chief Pilot

**Date: August 26, 2013**
**Location: UPS Flight Training Center; Louisville, KY**
**Time: 0810 EDT**
**Present: David Lawrence, Katherine Wilson - National Transportation Safety Board (NTSB); Lawrence Ashby - UPS; William Middleton – Independent Pilots Association (IPA); Normand Bissonnette – Federal Aviation Administration (FAA)**

Capt. Corrons was offered and declined representation.

During the interview, Capt. Corrons stated the following:

His name was Luis R Corrons, and he was 60 years old and had been the chief pilot on the A300 for 3 1/2 years. He said prior to that he was the B757, 767 Training Manager. He had worked 25 years for UPS. His total flight time total was 10,500 hours. He had 7,000 – 7,500 hours as PIC. He had 650 to 700 hours in the A300, mostly as PIC. He began flying as a civilian in 1969. He was a charter pilot. He spent 2 1/2 years working for Boeing, and flew a B737 for corporate. He flew for People Express for 5 1/2 years on the B737 and B727, and it was mostly captain time. After Continental purchased People Express he was hired by UPS. He had flown the B757, 767, and the A300 at UPS.

He was responsible for crewmember management, up to and including discipline, and his group also conducted line checks so they were attached to flight training and standards. He was also responsible for general crewmember tracking. He was responsible for fleet management, delay tracking, everything flight operations, and crewmember performance. He flew the line 2 to 4 days per month depending on work his schedule. He was dual seat qualified on the A300.

His group managed crewmembers assigned to them. Each of his assistant chief pilots (ACPs) had a set amount of pilots. They cultivated some strong relationships based on need. They were a strong point of contact in crewmember management. About a year ago, he used to have flight standards responsibilities but those responsibilities were now under training and standards. There was a "dotted line" so he was not completely devoid of those responsibilities. His ACPs were line check airmen so that there was the connection to the training department. He worked closely with the training manager. The reason he thought the responsibilities had shifted was to better align with the AQP process. Training and standards were now under one umbrella.

Crewmembers were randomly assigned to an ACP when they came to the fleet. He knew the accident captain but did not know him well. The accident FO had not been in the fleet long so he did not know her personally. He had not had a time to review the accident crewmembers' records. He was not aware of any corrective actions in their files. There were no concerns from other pilots about flying with them. They had a records department. He was only privy to a crewmember's training records and the exception history, which was where the disciplinary actions were kept. He said he had no need to access employment records.

There was not a preferential bidding system for crewmembers to avoid each other. He thought that captains bid first and then the first officers bid second. There was not a process for a FO to say he did not want to fly with a particular captain. He was not aware of another pilot not wanting to fly with the accident crewmembers.

Crewmembers could contact their ACP by accessing the contact numbers for the chief pilot's office through the flight operations web site or by calling the chief pilot's administrative office. Phone was the primary form of contact. Pilots could also walk in to the chief pilot's office. ACPs had an office at the flight operations office or the Air Service Center. The A300 was only based in Louisville. Training personnel were located in the Training Center in SDF. All ACPs were located in SDF for domestic operations.

Pilots could file an event report, ramp hazard report or ASAP report. He was not directly related to ASAP but it was a system where they had FAA, Union and company fleet representatives on the ERC. They met once a week to discuss event/mishap reports. A quarterly ASAP report with deidentified information was made available to the pilots. The pilots could access this report on the web. He was not familiar with any current safety issues. Reports could be about flap exceedances or windshear to create an awareness of what was going on out there. He was not aware of any current safety issues with non-precision approaches or stabilized approaches as reported through ASAP.

Issues specific to the A300 would be tracked through the FOQA program. Concerns reported to the chief pilot's office typically related to parking, mirrors, marshaling, hotels, customs issues, as well as international issues. They did not get too many repeats. Most things would come through an event report or ASAP. There was nothing that stuck out about the A300.

If there was a safety issue he would ask the crewmember to submit an event report or ASAP report. If they identified an issue, they would discuss it with the training department if it was procedural, or they would talk to the safety department who would do a risk analysis. They took everything seriously. The event report was electronic. They would go to the flight operations website and find it under event report. It was an electronic form where the pilot would fill in the blanks and put in a narrative. Sometimes the event reports were deidentified and event reports came in all flavors. Reports addressed a number of things from shuttles to catering to mandatory safety related things like an engine shutdown.

The A300 chief pilot's meeting, also known as a business planning meeting, was used to get the entire A300 department together to discuss training, standardization, and projects. They tried to meet monthly. There were also monthly training and standards meetings with the training center fleet. The meeting was held last month. There might have been a meeting this month but he was on vacation. They discussed common issues, safety, standards, procedures and projects. There was no discussion about non-precision approaches recently. They recently talked about checklists, smoke procedures, and getting clarification the from Airbus. 300. Non-precision approaches were always a concern because they did not shoot them that often.

Airupsers.com was a way that they distributed information to the crewmembers either on a general basis or a fleet basis; they also had a system of bulletins to the flight operations manual

to update that. There was a chief pilot's hotline. It was a recording put out to the crewmembers. A pilot's job was never in jeopardy for filing a report.

He attended IECQ training yearly. He did not observe training. He held a line check airman certificate on the A300. He was required to perform 8 checks a year but he tried to perform twice as many. As chief pilot he had input to flight training and procedures through flight training and standards. He was a line check airman but not a simulator evaluator. During line checks the approaches flown were whatever ATC assigned. During line checks they did not encourage a specific approach. During line checks they did not drive what the flight crew did, they just observed.

To his knowledge, there had been no discussion of changes to training or procedures since the accident. Recently a change to the departure procedure was implemented; specifically NADP 2, where climb thrust was set at 1500 feet instead of 3000 feet, based on ICAO. There had been no changes to approach procedures.

He said he was not aware of any non-precision approach procedure issues on the A300 that stuck out.

He could not guess how often crewmembers flew non-precision approaches; it depended on the airport and weather conditions. Asked if there were different ways to shoot a non-precision approach, he stated "we strongly encourage use of the autopilot." They used profile, also known as VNAV in other fleets, as well as vertical speed modes. They got away from teaching dive and drive years ago. They taught and the books showed that the preference was to fly profile mode because you would couple the autopilot to the path. It was a much safer approach. When asked if there was a combination of profile and vertical speed modes used, he stated that with a LOC or ILS glide slope out you would use vertical speed before selecting profile. So there was a combination of the two. In his opinion if a pilot flew past the final approach fix and was high he could use vertical speed to intercept a profile approach from above. But he would recommend a go around if the approach was too high. He also stated that if you were just past the final approach fix and it was recoverable it would be a judgment call whether or not to use vertical speed to recover. Pilots were shown this but only as it related to ILS glide slope out.

In his own training he had seen both profile and vertical speed non-precision approaches. He did not recall how many practice non-precision approaches he had performed in initial training. He would say "lots" but it was 13 years ago. He recalled performing at least two non-precision approaches in the last CQ.

Regarding whether pilots were adequately trained to perform a non-precision approach, he felt that they had solid procedures and briefing guides, and they did several approaches in training and CQ. They had strict procedures on how to conduct them.

He had never flown the A300 into BHM; he had flown the B757 into BHM but had never landed on runway 18. He occasionally got operational questions from pilots but they were not related to non-precision approaches.

He was shown a LOC 18 approach chart. The approach can and should be flown in profile mode. The minimums for the approach would be 1200 feet with IMTOY identified. The N/A in the minimums made the approach not legal to fly at night. There was a discrepancy and conflicting information with the note at the top of the chart. If someone called him about this, he would call the Jeppessen department for clarity. Crews did have chart NOTAMS as well as access through the dispatch paperwork. He was not aware of any chart NOTAMS related to the LOC 18 approach in BHM. Chart NOTAMS came with the Jeppessen revisions.

He was informed via phone call about the accident and was on vacation at the time. After being informed he tried to gather himself and then called his ACP on duty. The ACP on duty had already heard about the accident. One ACP was sitting in for him and another was the fleet duty ACP who was on duty to handle questions, concerns, etc.

Non-precision approaches were trained during every CQ.

He received notifications about all fatigue calls on his fleet. When a pilot had 6 attendance events in a year that set off red flags and drove an assessment of the crewmember's attendance history through an exception history. They would call the crewmember and ask some questions. A fatigue call was not questioned. If a fatigue call was taken, they respected that and the crewmember was immediately removed from service. They would develop a relationship to understand the situation.

UPS had a no-fault go-around policy and there was not a mandatory event report for a no-fault go-around.

There was a fatigue safety action group that looked at each fatigue call and crew pairing. The group consisted of people from different departments. Everything was analyzed and recommendations were made based upon the findings. He believed there was a way for pilots to learn about recommendations made by this group. Pilots called scheduling for a fatigue call and there had probably been a fatigue call in the last 10 days or so.

One of the ACPs had an extra duty to schedule line checks. If doing an AQP line check, they just did whatever the flight crew was flying. He thought line checks were distributed between day and night flights.

It had been a long time since he had flown a non-precision approach; more than a few months.

There was a review of a new gateway before an A300 flew in for the first time. An ACP would review the gateway. They worked in close coordination with the district in that region to determine any special needs, parking hazards, etc. They did a full scope evaluation. He did not recall when they took over BHM as a gateway. They performed periodic reviews of gateways as necessary; as they became aware of changes.

Attendance issues, sick or absence, in general raised a flag for them. If a crewmember called in fatigued, they were going to take a look at that and would try to find out why. The 6 absences

that required a review was a combined attendance and not just fatigue calls. He said if a crewmember called in fatigued twice, they would look at it closer.

Crew planning built the parings. He got an email with the pairings. If they saw something not right they could make suggestions about possible changes. He did this every 56 days when the bids came out. He had never forced a paring change due to seeing a fatigue issue. The pairings were built with strict guidelines and the lines were built based on contractual as well as FAR regulations.

He did not recall either accident pilot having excessive attendance problems. The accident FO had not been with the fleet very long. The ACP would do the follow up and would let him know of any issues.

Some airports were special airports. Most of these airports were international and had special entry where a pilot would have to first fly in with a check airman or instructor pilot. BHM was a special airport at one time and had a pictorial diagram, but it did not require special entry. The special airport designation was removed but he did not know when or why the change had occurred.

The interview concluded at 0920.

## 2.0 Interviewee: Larry Parker, A300 Training Standards Manager, UPS

**Date: August 26, 2013**
**Location: UPS Training Center; Louisville, KY**
**Time: 0935 EDT**
**Present: David Lawrence, Katherine Wilson - NTSB; Lawrence Ashby - UPS; William Middleton –IPA; Normand Bissonnette – FAA**

Capt. Parker declined representation.

During the interview, Captain Parker stated the following:

He was 61 years old. He had been the A300 Standards and Training Manager since 2010, a little over 3 years. Prior to that, he was the B747 Classic chief pilot. He retired that aircraft. He had been with UPS for 25 years. At UPS, he had flown the B727, B747 Classic, and A300. He flew the A300 twice. He was on the 747 for 15 years, brought him over for a year and half as chief pilot on the A300, then he was asked to go back to the 747 Classic as chief pilot for 2 years to retire the airplane, and then he came back to the A300.

He had about 12,500 hours total time, 8000 of which was as PIC. He had a little over 300 hours on the A300, all of which were as PIC.

Before coming to UPS, he was a civilian trained pilot. He flew commuters out of Philadelphia at Altair Airlines. The company had Beech 99, Nord 262, F-28 and DC-9 aircraft. He then went to People Express Airlines and flew out of New Jersey in the early 1980s. He flew the B727 as a

FO for 14 months and then as a captain. He also did training on the B727 and pilot recruiting. He flew for them until about 1986 when they were bought by Continental Airlines and was with them until 1988. UPS was just starting up and he interviewed with them as a management pilot. He was hired in as a management pilot, Human Resources because of his interview experience. He worked for 2 years hiring the first 800 pilots at UPS. He then became a B727 check airman and fleet supervisor. He then transitioned to the B747 Classic and was an instructor, then a training manager for a couple of years, and then became the chief pilot on the classic. He flew the B747 Classic for 15 years before it was retired and he went to the A300.

As the A300 Standards and Training Manager he was responsible for overseeing the training in the training department, all programs – qualification, CQ, SPOT training, upgrade, and requalification, and the instructors and evaluators. There was a new "dotted line" with standards. He was in charge of anything to do with OE and IE on line; so he was in charge of the standardization of the fleet and the operation. He described the "dotted line" as being responsible for standardization of flying the airplane on the line which included OE and line checks. Anything to do with policies and procedures would be under standards. The change occurred at the beginning of the year. The reason for the change was that the philosophy was to have a better understanding of how they flew the airplane. UPS had two different types of operations. There was standards and there was training. The two were put together and it made for a more safety oriented and standard operation. Also, flight operations would help out the training department with conducting line checks. They are on "contract" to help them with the line checks. Policy and procedures were under standards.

He was also on the CRM Steering Committee and oversaw that group.

He tried to fly 3-4 days per month. He tried to fly a variety of trips and while he flew at night he did take advantage of flying day flights.

His boss was Pete Laurentz, Director of Training and Standards, who was in charge of all training and standards. Capt. Parker was the A300 training and standards manager. He had 19 managers that report to him. Of those, 15 were IE or check airmen. One instructor was becoming a check airman, and 3 ground school instructors, also known as FBS instructors, who taught ground school systems, procedures and virtual flight deck. UPS had the virtual flight deck which was a system of teaching systems in the classroom and also had the VPT[1] that FBS instructors taught in. He also oversaw one person who was a "standards guy" who organized line checks for the line but did not do training. This came out of the new reorganization. He also oversaw 19 line instructors; these were line pilots who were called in during peak training periods to teach in the simulator or maybe FBS instructors teaching procedures. They were mostly on the line unless there was heavy training going on. There were also 5 designees who were check airmen who did type rides; they were management pilots.

He knew the accident captain on a personal level, as an acquaintance. When he would fly he would see the accident captain but he did not know him outside of UPS very well. He might have met the accident FO but did not remember. He had never flown with the accident captain.

[1] Virtual Procedures Trainer

He just recently reviewed the accident crew's training files and reviewed what training they went through this year. He knew they both completed their CQ on the same day but with different instructors. It was his understanding that their training was completed successfully and within the footprint. There were no deficiencies in their records that caught his attention when reviewing their files.

He knew several pilots that had flown with the accident captain and they had nothing but positive things to say about him.

UPS had several training programs under AQP. Qualification (Qual) training was 29 days and was provided to pilots initially coming into their program. Training was divided into systems training, followed by knowledge validation of 100 questions; procedures which included workshops done in the VPT, followed by procedures validation; then maneuvers which taught everything about flying the airplane in the simulator to include all procedures, all abnormals, and different approaches, followed by maneuvers validation. After that, pilots completed a series of LOS; he thought there were 4-5 of those. After LOS was completed successfully, pilots completed LOE which include a check ride and captains would also get a type rating. Upgrade training mirrored Qual training but it was shorter, about 17 days.

CQ was done every year and was a 3 day program. Day 1 was general subjects such as emergency training, followed by systems evaluation for the fleet in the afternoon, and then another knowledge validation. Day 2 was LOS 1 or "first look" where a pilot would come in "cold" and fly the footprint in the simulator for 2 hours, followed by a facilitated debrief. There were workshops where they would talk about several different things. This year focused on non-precision approaches and performance issues like no slat/no flap approaches. In the simulator they would fly to Mexico City, which was a high altitude airport with a complex STAR to get in there and Mexico could be a little bit challenging so they liked to put that in the program. They would also do high altitude stalls and this "was done in the brief." LOS 2 was 2 hours. They mostly did SPOT training where they performed things that were done in the workshop the previous day. The simulator session ended with a facilitated debrief. Day 3 was maneuvers validation for 1.5 hours. They performed V1 cuts, CAT II approaches, and then SPOT training, such as stalls. They would then do a facilitated debrief and then another workshop where they would review memory items and limitations. They would talk about aborted engine starts and perform that. They had also been emphasizing smoke procedures since the UPS 6 accident.

CQ was usually developed a year prior to its implementation. They would look at high risk areas from FOQA, and would try to incorporate that into training. They also looked at ASAP reports, high risk reports, crewmember training evaluations like repeats and debrief items that surfaced, and also the required items based on the AQP manual.

It was decided to include non-precision approaches in CQ because they looked at the data and debrief items and it seemed to be a concern and needed more emphasis. Pilots did not do non-precision approaches on a normal basis and were a "bit rusty." If they saw a deficiency in training, they would remediate it right away and most crews were successful. As they looked at high-risk data at the first part of 2013, repeats and debrief items related to non-precision approaches had decreased.

The training department continuously met and talked about non-precision approaches. They talked about what the main issues were as they were planning for next year. If deficiencies were constantly seen, they would try to address them before the year was up.

They continuously look at feedback received about training. In department meetings they were constantly looking at how to improve. They communicated all of the time with instructors. There also had a quality assurance program and an employee from that division who was "totally unbias" and came in to evaluate their program. The A300 would be compared with other fleets then they would receive feedback. Bob Walker was the one who did the evaluation. It was a new program that was instituted when training and standards joined. Bob Walker worked for Pete Laurentz. The training department also did their own evaluation and watch instructors to determine if there were any issues with calibration of how they were training and also looking at what they were training.

He could not say there was a common concerns across check airman regarding training on the A300. If they saw something highlighted in the data they would address it right away.

He met with the check airman in the department meetings. There were also separate meetings with just the check airman and they would talk about issues that went on in the training and the airplane as well. He thought the last check airman meeting was in July. They usually met once a month. During the last meeting they talked about a new procedure for use of climb thrust versus go around, and issues related to the line like a boost light that comes on where they can be of assistance to the engineering or maintenance departments. He could not remember talking about non-precision approaches, but they have talked in general about all procedures in department meetings. Call outs had been pretty standard with the airline for at least 10-15 years. Stabilized approaches were continuously taught and want to make sure crewmembers were aware of it, but they did not discuss changes because they expected pilots to know what the stabilized approach criteria was.

The training department used the AirUPSers website and there was a section that pertained to the A300. They would try to highlight things that they saw in training or in line operations. Anytime something new happened, it would be updated on the website right away, and this probably occurred 3-4 times a year.

Changes to CQ were made on a yearly basis. They normally started in January or February by looking at past data, FOQA, pilot event reports, safety reports, and ASAP reports. They took the data with the AQP manual and plan what they want to train the following year. If something came up after they planned the year's training and they thought it was important, they would try to include it.

Since the accident, they had reviewed how they train and what they did for non-precision approaches. At this point, they did not see any changes that were needed. They felt pretty confident that they trained pretty well on that.

Non-precision approaches had been included in training because it was a high debrief and repeat item in the past. Even if it were not a high debrief or repeat item they would still want to include it in their program because crewmembers did not do them often. He would want to see it in their CQ program. Non-precision approaches were trained on day 2 of CQ and was also a part of LOE.

UPS instructed its pilots to fly a profile approach unless it was not available because of meteorological issues, it was deferred for maintenance or it could not be pulled up in the database.

A non-precision approach was different in that it did not have the precision had with an ILS. He could not pinpoint the challenges of flying a non-precision approach. Profile gave a crew vertical and lateral guidance similar to an ILS. There was a briefing guide that would walk a crew through how to set it up.

A non-precision approach was usually flown in profile mode or vertical speed mode. In training they did an ILS with the glideslope out and combined vertical speed and profile modes. If the final approach fix altitude was different than the flight path, once the airplane crossed the final approach fix the pilot would set the vertical speed at 1000 fpm and then immediately select profile. This was the procedure if the intercept was after the final approach fix. He thought most approach plates had been corrected where the intercept altitude and final approach fix altitude were the same; he confirmed this on the BHM LOC18 chart. If the altitudes were the same, a pilot would select profile right away.

Pilots were not trained to capture a vertical path from above. A pilot would activate the approach through the FMS and then when established inbound the pilot would select profile and in the case of the LOC18, it would follow the path. In this case, pilots were not taught to use vertical speed to capture the flight path and then select profile. Pilots were not taught to intercept a VNAV path descent from above using vertical speed, they would use profile.

When asked to review the chart for the localizer 18 approach to BHM, he said the minimums were 1200 feet. Whether the approach could be flown would be predicated on the visibility which was 1 5/8 miles. It was a CAT C approach for the A300. He did not think the approach was allowed at night.

He felt confident in the way non-precision approaches were trained. They thoroughly went over them in a workshop and the simulator. He was confident UPS crews could perform a non-precision approach.

He could not recall having any issues flying a non-precision approach. He did a non-precision approach in training but flew very few on the line. He could not remember the last time he flew a non-precision approach on the line, but thought maybe he did one time going into Billings in visual conditions about a year ago.

He had never flown into BHM.

Regarding how pilots were notified of updates to AirUPSers, he hoped that pilots would come to the website. He thought a majority of pilots did. When pilots come in for CQ they would talk about the website a lot. The website was a wealth of information from operations, to training, to the company, to common problems seen on the line.

The CRM Steering Committee was made up of management and line pilots from each fleet. The committee would review CRM issues, recommend any changes to CRM to Pete Laurentz to institute it in their training. CRM was a part of all of UPS' training and the operation. They had taken the threat and error management (TEM) model which talked about threats, errors and how to manage errors and that was what they primarily talked about with the committee – how do they do that; how do they control threats, trap errors and mitigate it when they have to. They did that through all of their training, through facilitated debrief, and they continuously tried to get it out on the line as much as possible. He thought this was one of the best committees at UPS. They followed the "Big 6 Model" and discussed barriers to threats such as communication, teamwork, situation awareness and automation. This was done in training and in operations. This year the CRM Steering Committee came up with a character called "Max Threat" and several videos were created with the premise that Max Threat was on your flight and would create mayhem. As an airline, it was a safety culture that they had pushed to maintain their safety record. The committee also tried to talk about distractions and time management. The committee met quarterly.

In training, fatigue was an awareness and emphasis item. UPS expected crews to be well rested and that was taught right from day 1.

Pilots would provide feedback about training and procedures be completing a form at the end of the training. Also, the training department's door was always open. On the first day of training, pilots were given the form to complete and they would evaluate each module that they went through. Some pilots would put their name on the form. Pilots could also give feedback by calling one of the instructor/evaluators.

He liked flying to Billings. About half the trips he bought were at night. It was a 3 leg trip with a nonstop to Billings and a nice layover there. The next day the flight would come back on 2 legs. A lot are night turns like to Bradley or San Antonio.

He probably flew a non-precision approach over a year ago in VFR conditions.

He thought they recently updated something on AirUPSers regarding approach speeds and landing distance calculations; it was maybe a couple months ago.

He did not recall any particular CRM issues that were the focus at the last CRM Steering Committee meeting but they were just trying to be proactive. They also did facilitated debriefs in the simulator and on the line. When they did a line check, they wanted to do a facilitated debrief. They even asked crews to debrief on their own.

If a flight passed the final approach fix without arming the profile, he thought that if a crewmember got that far behind they should abandon the approach.

UPS also had an email system that would send alerts to pilots of updates to AirUPSers that come out. Pilots provided their email addresses voluntarily. Emails would be sent to pilots, for example when there were changes to the AOM.

UPS trained that either pilot could call for a go-around; however there was no scenario presented in the simulator that required a first officer to call for a go-around.

He thought they had previously trained for pilot incapacitation but could not say they were doing it currently.

The forms completed by pilots in training were called training critique forms. He could not recall anything from the feedback received that dealt with non-precision approaches.

He was notified about the accident when a colleague telephoned him the morning of the accident. After receiving the phone call he went into work.

Regarding training for non-precision approaches and how his department ensured pilots were proficient, he said they talked about them in the workshop, and had a PowerPoint presentation. He thought they addressed non-precision approaches every year in CQ. They also talked to crews on the line and pilots indicated they were comfortable doing them. Looking at the FOQA data from this year, he thought non-precision approaches were less of an issue than they had been in the past.

He thought the training department at UPS was one of the best. Management and IPA would work collectively. He felt fortunate to be working with such a professional group who took everything seriously.

The interview concluded at 1050.

## 3.0 Interviewee: Matt Piliere, Flight Operations Compliance Manager, UPS

**Date: August 26, 2013**
**Location: UPS Training Center; Louisville, KY**
**Time: 1120 EDT**
**Present: David Lawrence, Katherine Wilson - NTSB; Lawrence Ashby - UPS; William Middleton –IPA; Normand Bissonnette – FAA**

Mr. Piliere was offered and declined to have a representative.

During the interview, Mr. Piliere stated the following:

His name was Mathew A. Piliere. He was the Flight Operations Compliance Manager. He had been with UPS for 21 years, and he was not a pilot. He was hired in 1992 as a ground school instructor, teaching regulations, emergency equipment, long range navigation and general subjects, all non-specific training. He got involved as the program developer during early stages of AQP in the late 1990's. He had a degree in instructional systems design, and was promoted to manager in 1998 as a flight simulation manager, managing the maintenance function of the simulators.

His first job was flight simulation manager, and then he moved to flight training program development for AQP. He served 3.5 years as employee relations manager, followed by a brief stint in the Chief Pilot's office as the business manager, and in 2008 moved into the office he currently holds.

He said our compliance function was split into 2 parts, one side looked forward, managing the ops manuals and OpSpecs, and new programs. He said his role was to "look in the rearview mirror," monitored all self –disclosure functions like ATOS inspections, IOSA inspections, DOD inspections, and he coordinated with an internal evaluation team to ensure oversight activities to see that they were on track. He also developed any corrective actions from any FAA LOI they received. They reviewed every crewmember event report. They looked for those that may have regulatory implications. He said they weren't responsible for the event reports, the chief pilots and safety department were, but they looked at them for regulatory issues of the organization or the crew to make sure they were addressed in a timely fashion. At the request of the DO, they formed a fatigue safety action group (SAG).

When asked about the SAG group, he said they more or less looked at "bonafide" fatigue issues" or concerns brought to their attention. They looked at it though two lens. He said there was the contractual labor lens or industrial, and the fatigue working group of IPA and UPS would look at how contractual issues were addressed. SAG steered clear from the contractual issues side, and tried to identify where there were fatigue risks, develop trend information and look to see where there were needs for changes. They looked at trends as well. The looked at every fatigue call a crew made based on an event report or fatigue risk brought to our attention. The ASAP ERC would refer a case to their attention. The working group would also ask them to look at a specific case. They also used fatigue issues identified from ERC. The Director of Ops was responsible for the fatigue action.

When asked if he was involved in the fatigue working group, he said with the SAG, they only got involved if they had a case they wanted them to look at. Airline safety had 2 people on the SAG, one a safety manager, and another was a data analyst. The chief pilot's office had two members, the crew scheduling department had one person from their planning office, the industrial engineering department had one member who assessed implications and processes, and himself as the chair in the regulatory compliance. A flight qualified supervisor was the administrator. There are some tech people who sat with them, but they were not members. SAG was not fleet specific. He said he was the chairman of the SAG.

When asked how you found out about fatigue events, the primary means was crewmember fatigue event reports. Fatigue event reports were unique, and did not have the wide spread dissemination as other reports. It was viewed as safety sensitive type material, to make sure there were no concerns by the crewmembers who told them about a fatigue event, and they treated it like an ASAP report, although the crewmember was always free to file an ASAP report anytime. He said they would adjudicate those reports and were de-identified for the SAG to be considered and analyzed. Fatigue calls came from the pilot's sick bank. He said in charge of the fatigue working group were members from IPA Michael Moody and Lauri Esposito, and from the company it was John Pass and John Snyder, who was the flight qualified administrator. Mike and Laurie did business for the "E" board at the association. Others did their work on part of the company.

The process of the SAG was to meet on a monthly basis. Been doing it for about 2.5 years, and there were a few times when we couldn't coordinate schedules to meet. He said they looked at schedules, mapped out in a diagram format to look at where the rest periods, where deadheads were, and where sleep debt could have been. They also used a bio-mathematical model. They gathered all that information and established an agenda and looked at each case on its own merit. Each of the members know something about each case, and they determine primary and secondary causal factors were for the event.

He said he had a safety database that included other safety issues, and followed a safety system management protocol. During their first year that they started, "we were pretty new at it." "We at first didn't know what we were looking at but got better." They were more proud of the last 6 months.

They looked at 15-20 cases each year. They were busy during the Part 117 discussions, so there were a higher number of fatigue calls during that time.

They did not make any changes based on Part 117 other than to establish a more robust fatigue safety action group than what was required. The FAA required every carrier to submit an FRMP. There was an FAA INFO that laid out the requirements for an FRMP. IATA had an FRMS implementation guide, and they went through it trying to make sure they didn't have "tunnel vision" for the FAA requirements, and tried to see if there were any ideas about safety analysis that would be helpful to them. The initial FRMP didn't reflect that, but it matured over time. He said they renewed their FRMP program late last fall, and it is a more robust program.

Causal factors were entered into a data base. As the airline is in the process of certifying an SMS, they tried to make sure they establish methodologies for the SAG that matched the SMS implementation. He said they were constantly looking for trends, which was the function of the safety analyst. For instance, when they see trends like for a particular hotel issue, they would identify it. When they saw those trends, conforming to SMS protocols, they would then do a risk assessment, and set it as a low/med/high risk. Low risk events were usually handled directly with the affected department. Moderate or higher risks were sent to the Director of Operations to make sure it was being addressed at the appropriate Part 119 level. They reported on a quarterly basis with a formal to the flight safety counsel. It mostly contained flight ops and safety issues. It was not an operational counsel. He said he had a reporting function to that counsel. The last one was in July. He said there no concerns addressed at that particular meeting, just statistical information was shared. He said the number of fatigue calls was down. The last concern discussed as a group for a few specific parings that got a lot of crew member attention. For example there was one pairing out of MIA, which was a Bogotá turn. The concern of that pairing was the Bogotá airport with its high elevation and language challenges. It was a little more challenging than other trips, and required the pilots to be well rested. He said his recommendation for that particular trip would be to add an IRO on it, but it was not allowed contractually. He said they did not see a lot of specific pairings that were problematic. The Part 121 had been "restricted down." Working with the association, they looked at a lot of the fatigue issues in scheduling even before the FRMP came out.

He said if they were going to look for help from upper management, they would be asked to look at the problem, or ask the particular business partner to look at the problem. What he found was that historically, about the time they were about to work something out, the schedule advisory board would come to them and the issue had already been worked out with a solution to the problem.

When asked if SAG was involved in guidance on how to manage fatigue, he said yes, in the FOM they developed an alertness guide, which was incorporated into the FOM late last year. There was a passage in there about the recent AC for "fitness for duty." They also received input from the association, and vetted it through a sleep management professional. He thought the guidance was appropriate for all phases of flight. It talked about being rested prior to a trip, rest during layovers, about grabbing naps when able. There was advice in the document, to include food intake and water intake, etc. He thought it was a good document for what we know now about fatigue, science and trying to understand what they knew about the workforce and how they did business. There was a bulletin that first came out for the revision to the FOM.

When asked if there were any other means to disseminate information out to the pilot group regarding fatigue, he said that they looked at making sure the training department had the information. He said last month's fatigue SAG they had the guys that were developing the coming years training observe several SAG meetings to get insight to their process. The FRMP was available to their crewmembers, but he knew that Dale Roberts, who oversaw fatigue issues for FAA, that there were issues of where to find the FRMP literature, and they've made sure pilots know where to find the information that was covered in it. He believed they had done a better job in discussing fatigue than the requirements of the FRMP. It was better that the FRMP

was in the FOM since that was the document the pilots were carrying with them. The fatigue training was required annually during classroom training.

He said the fatigue actions safety group would not know if either accident crewmember filed a report, and he asked if either of the crewmembers had any fatigue reports prior to the accident, and neither did.

He said he did not know either crewmember of the accident flight. I thought that the captain was in one of his classes on general subjects in the 1990's, but couldn't be sure. He did not know the FO. Just gathering information for the NTSB investigation, he saw that the captain was once in the marines, and joined UPS about the same time.

He was informed of the accident through the normal telephone tree response. He got a phone call. After the accident, he got a request from Duane Pifer, and pulled historical flight data for the pilot for total flight times for the pilots. His other responsibilities after the accident was to be in the global operations area, where there was a response team in a "navigation room" (command center). He was there, and probably had the least to do it he room, but he also assisted in obtaining documents for the FAA, but Safety was the conduit for information to the investigation.

When asked if there was a Part 117 analysis done to the UPS operations, he said he was not party to that analysis, but that it had been done. He said he never reviewed any documents they produced. He said he could only speak to it anecdotally, and it seemed it would be difficult to have a night cargo next day operation with some of the limitations built into Part 117. He said they might have to change the way crewmember schedules are developed "pretty dramatically."

Event reports were the dominate source of information for fatigue reports, and was about 90-95% of the fatigue information they gathered. There were no high risk fatigue events identified under SMS. If they had identified a high risk event, by SMS protocols, they would have to cease that operation and put mitigations in place.

He analyzed every fatigue event report, and he led the discussions on fatigue as part of the SAG group.

Dr. Steven Hursch was the doctor who reviewed the FRMP program for the FOM revision he spoke about earlier.

He said he was familiar with "special airports," and Bogotá was one of them. The SAG group had not been a part of determining airports that were "special airports."

He said they looked at every single fatigue report, whether they thought there was a lot of risk or none.

When asked if he would suggest napping during flight, he said his background was as a navigator, and would sometimes find himself as the only person awake and did not find that as a

great situation but preferable to an accident, so his opinion would be to support if would be found to be a safer approach.

Regarding the 117 consideration, he said he saw an increase in fatigue calls, but still looked at each one. He was a strong advocate of looking at things impartially, and would not allow any political agenda. The same went for when they saw a spike in calls. They looked at all of the cases impartially since they were de-identified. In the beginning of their process, they were still working on what was important to look at. He said they did not get involved in pay issues. They did not ever try to cross back and forth between the industrial and safety.

They reviewed all the event reports filed, and sometimes the fatigue working group brought SAG information and they looked at those fatigue events.

He said Bogotá was a medium risk, the another medium risk was an international trip that went from ANC to ONT, layover, then returns. From a fatigue risk analysis, it was challenging because no two cases were alike, and there could not be a trend. There was some information we did not analyze. We don't look at crew commutes, and don't look at the rest prior to a trip because they simply did not have the information. They just looked at adequate rest periods. This particular trip was picked up as a trend but they were never able to attribute it to a specific issue that needed to be corrected.

When asked if there was a requirement for the crews to brief fatigue risk prior to flight, he said he did not believe so. He said it might be best to ask an FOM expert that question. It might be in a CRM chapter.

He said his degree was in education, and he did not have a degree in psychology at the bachelor's level.

He added that, as far as this case, "it really bugs me." He really wanted to make sure things got fixed. He said he did not see anything in their schedule that foresaw fatigue, and he was not privy to what the crew did on the layovers, and knew the crew had enough scheduled rest, and had even used the crew rest rooms. He did not know what more they could have done.

The interview concluded at 1225.

### 4.0 Interviewee: Houston Mills, Director of Safety, UPS

**Date: August 26, 2013**
**Location: UPS Flight Training Center; Louisville, KY**
**Time: 1400 EDT**
**Present: David Lawrence, Katherine Wilson - NTSB; Lawrence Ashby - UPS; William Middleton –IPA; Normand Bissonnette – FAA**

Capt. Mills declined representation.

During the interview, Capt. Mills stated the following:

He was 50 years old and had been the Director of Safety for the last 8 months. He had been employed by UPS for 19 years and 4 months. Previous positions held included the following – International Chief Pilot in charge of all international flight operations, Director of Training for 3 1/2 years, Ontario Western Chief Pilot, Assistant Chief Pilot, Check Airman, Flight Standards, Training, and human resources supervisor doing pilot hiring. He was current and the internationally qualified on the Boeing B757/767 and had flown the B727 first officer position and DC-8 as a flight engineer. Prior to UPS, he spent 9 years as a Marine F18 pilot, Safety Officer, Quality Assurance Officer and Tactics and Combat Instructor. His total time was approximately 5000 hours with 3000 hours at UPS, and 3500 hours PIC, with 2500 hours PIC at UPS.

He flew approximately once per month, flying a turn or a layover, rarely using the simulator to maintain currency. He maintained his Americas and international qualifications.

His current roles and responsibilities included reporting to the airline President and serving on his staff. He ensured the airline was in compliance with all the regulatory requirements and quality of safety programs met and exceeded those standards. They had a variety of programs including voluntary implementation of SMS (last 2 years working to be prepared for Part 5), ASAP (flight), ASAP (dispatcher), ASAP (maintenance, which was expected in a couple of months), and FOQA in which they worked collaboratively with IPA and used data streams to be predictive. There were three levels of safety – reactive, proactive and predictive. Every day their goal was to become predictive. They had an extensive event reporting system that allowed employees to tell us what they saw, including a ground hazard reporting system. The event reporting system included both required reports by the FAA and also operational issues like catering and hotel issues. They probably got close to 100-300/month. The system was very robust in terms of the pilots talking to them. These programs allowed their people to tell them what they were seeing and to provide transparency at the highest level.

Every pilot had an Assistant Chief Pilot assigned to them who tracked safety reports and also had dedicated administrative assistants that ensure the flow of information. If the event report was deidentified it would go only to the Safety department and only the information was transmitted. It was very important that their people could report to them without fear of reprisal. That was our policy, they post it and they communicate it over and over. He was not certain what percentage of the reports were de-identified, but he believed it was very small.

UPS maintained an ASAP program that really provided the “meat and potatoes” of information as it provided the pilot with certificate protection. It was very robust, three tiered (IPA, UPS and FAA). They frequently met to review reports that flowed through the system and what he was most proud of was the mitigation from accepted reports. This mitigation may be individual for someone who operated outside of the standards (debrief or training) or systemic in which information flowed through Flight Operations Safety Action Groups to recommend changes to policy and procedures. They also leveraged ASAP to train folks and allow an environment that did not punish, but allowed pilots to own up to a mistake and be retrained in a non-threatening environment. No one walked away with a lack of understanding and everything was fully vetted out.

Operators drove safety, the SMS system was not a vertical safety dynasty. They were responsible for overseeing the quality of all their programs, including FOQA and ASAP. They had a System Safety Manager, an SMS Implementation Manager and a FOQA/ASAP Supervisor. Working group members were pulled from flight operations. They had managers and supervisors in place to ensure the flow of information and activity got done. They had implemented Safety Action Groups for flight operations, ground services and maintenance so hazard reports whether they were from event reports or ASAPs flow to these groups so they could risk assess those activities and determine if they had some process gaps or opportunities to look at things from a process perspective and not an individual perspective. His team was attached to all those groups.

He was very data driven. The FOQA data gave them high level visibility as to how guys were flying every day and what the aircraft was doing. They were constantly looking at unstable approach rates, long landings and RTO's and evaluating where they were at and they were doing very well both internally and compared to the industry. They did this on a quarterly basis. While there were currently no concerns about data outliers, they wanted to be predictive, so they communicated early in the summer months when thunderstorms were an issue, and unstable approaches occurred. They also shared information with our local CMO at quarterly data review meetings. They shared FOQA, ASAP and AQP data with the CMO so they could look at the trends and concerns could be addressed. They wanted to mitigate things that were outliers. They would talk about those and address them accordingly.

There was nothing in the data pointing to problems with non-precision approaches, stabilized approaches, or standard callouts in the airline or the A300 specifically. As he looked at the data there was nothing that said the A300 was twice as worse than anyone else; that was not the case, and those numbers were really low. They looked at stabilized approaches on two fronts, no-fault go-arounds and unstable approaches below 1000 feet. But anything that was not stabilized below 1000 feet guys can go around and not fear that they would get a call from the chief pilot's office. They even tracked higher risk unstabilized approaches below 500 feet and that was a very low rate.

Their process was embedded within operations and they had weekly communications that went out to their pilot group, so if they saw safety information that they wanted to share, the chief pilot would share that with an addendum. They had ASAP and FOQA alerts and if they saw trends that were issues, they would send those out to our pilots and post them on our website as alerts. Also, if they had an airport that was identified as producing excessive GPWS events or a high unstabilized approach rates they imbed in our ACARS system a FOQA alert that would be displayed to the pilots enroute. There was probably 6 or 7 airports with FOQA alerts. The pilots were expected to be aware of the threats associated with the airports and must brief every approach.

The Safety department provided information to pilots through communication meetings and operational meetings and also shared data with the pilots during CQ training. As all of their safety was integrated, they took an integrated approach based on the data, particularly focus areas for CQ training. They continued to look at data on a quarterly basis and if the data showed

them something different, then they communicated and may adjust AQP recurrent training as was necessary.

All training at UPS was AQP. Capt. Mills attended safety action group meetings regularly, but did not routinely sit in on pilot training sessions. Safety managers did observe training.

He was not aware of any specific changes as a result of the Birmingham accident, but there were a lot of items being discussed. UPS was attempting to learn as much as they could, trying to identify more enhanced and restrictive procedures when runway 18 re-opened.

UPS looked at the Birmingham airport post-accident and did not have a reason to look at it pre-accident. Data did not exist that would have triggered Birmingham as being high risk based on their data and/or from their pilot's approach perspective. He further stated that "We do have gateways that pop, but that had never been one that had popped." UPS would continue to evaluate the approach and all the terrain around. They had contacted other airlines to ensure that they had not missed anything. Other carriers had been forthright in sharing this information and they had found that UPS processes were very much in line with them. Capt. Mills further stated, "We have so much to learn, but we will take any information that will help us to operate safer."

With regards to quarterly reviews, Capt. Mills stated they had a quarterly data review where they would track multiple FOQA elements. During the data review, they would give this information to the training team, along with the safety team and the FAA and would review that data. They also review the ASAP trends that they had received over the last quarter as well as crew performance through recurrent training. The Safety department attempted to look across all the data to see, if there was any commonality with the new emphasis requirements. The Safety department asked "Is our training hitting the mark that we planned?" Training may have to be adjusted.

Non-precision approaches were currently trained on day 2 in the CQ program. Captain Mills was not aware of the trigger for this training. He stated "In general we look at all the different things that pilots can do in the operation and then try to make sure they get visibility, in terms of being exposed to all types of emergencies." He further stated that the 2013 CQ program development began in January of 2012 and that currently there were no concerns regarding non-precision approaches on the A300 from FOQA, ASAP or AQP. The 2014 curriculum was submitted to the FAA and its development had started in January 2013.

No LOSA audits were planned at this time, however UPS was reviewing. He stated "UPS is a very standard airline. SOP was a very baseline of everything that they did. There was no data to support that our crew members do not follow SOP." SOPs were emphasized through CRM and line checks and a debrief at the end of a flight. UPS would consider a LOSA when the data supported it, if a high frequency of unstable approaches, long landings, or EGPWS events occurred, then a LOSA audit would be important. They had a voluntary self-disclosure program. During the last 8 months there was no data to suggest non-precision approaches were an issue on the A300.

Capt. Mills was notified about the accident by a call from flight control after which he notified the airline president and activated the airline response.

There were no FOQA alerts in Birmingham prior to the accident. He was asked if UPS pilots were encouraged to brief fatigue as a threat and he responded that fatigue was considered to be a threat just as anything else that would prohibit a pilot from performing his duties. If a pilot called fatigue, he was not questioned, but was immediately taken off the trip. Pilots were not told to talk to their ACP about why they were fatigued. UPS emphasized CRM so both pilots felt empowered to speak up when they saw something that was unsafe, because it was part of their culture. The captain had final authority, but both pilots had a vote. FOs were required to be assertive; if they saw a threat, they were required to speak up.

UPS had a fitness-for-duty policy in the FOM that clearly articulated their expectations. Pilots needed to be rested to perform their assigned duty.

He was not involved in fatigue calls. He was not a part of the fatigue working group but he did interact with the fatigue SAG. He sat in to listen. Fatigue SAG fell under the Director of Operations. He got together with the 119s and was the conduit for all of them.

He knew the accident captain, and that he was a marine. He was a very nice guy, very professional and motivated, always had a smile on his face. The accident captain was senior to him so they never flew together. He did not know the accident first officer.

He was humbled and honored to accept this job (Director of Safety). He had a passion for teaching and operations and being a part of something bigger than yourself.

UPS completed an IATA LOSA and DOD audit this year and scored very well. He last flew 2 weeks ago (a Louisville-Houston turn) and 50% of his flights were at night.

UPS captured 85-88% of all flights in FOQA. Capt. Mills was unaware of how many ASAP reports were received monthly but indicated US pilot participation was on par with the industry.

In his opinion, UPS's most significant safety improvements included the Flap setting procedure after parking brake release as you advanced thrust but prior to aircraft movement, No Fault Go-Around procedure and the change to stabilized approach criteria (all approaches must be stable by 1000 feet AFE).

They tried to leverage data across the airline so they could get ahead of things before they became events. They took the individual out so they could focus on the processes. They wanted to mitigate the hazard to eliminate the risk. UPS was committed to SMS and risk management, and continued to support crews with TEM and CRM and enhanced training. There was a good relationship between IPA, UPS and FAA. UPS was at the Level 2 SMS equivalent.

The interview concluded at 1455.

## 5.0 Interviewee: Robert Garland Flake, Jr., A300 Assistant Chief Pilot, UPS

**Date: August 26, 2013**
**Location: UPS Flight Training Center; Louisville, KY**
**Time: 1522 EDT**
**Present: David Lawrence, Katherine Wilson - NTSB; Lawrence Ashby - UPS; William Middleton –IPA; Normand Bissonnette – FAA**

Mr. Flake declined representation.

During the interview, Mr. Flake stated the following:

He was 58 years old. At the time of the accident, he was employed by UPS as an A300 Assistant Chief Pilot (ACP), and had been in that position for two years. Prior to this, he was a UPS MD-11 ACP for 10 years. He was hired by UPS on 11/16/87. His total pilot flight hours were 18,800 of which 13,800 were as PIC. Additionally, he had 340 PIC hours in the A-300, most of which was as PIC. Prior to working for UPS, he flew corporate for a drilling company in Tulsa, and United Air Lines (UAL) in 1979 prior to coming to UPS in 1987.

He described his role as ACP as "…the care and feeding of pilots assigned to us…certain projects that we are tasked with." There were certain projects or airports that they were assigned to, like if there was a gateway problem. They performed IOE and Line Checks, and served as subject matter experts (SME) available to the company in Flight Control functions.

He flew the line approximately once a month for 3 days, and his last flight was Saturday morning from Louisville (SDF) to Pittsburgh (PIT) although he preferred to fly to Albuquerque (ABQ).

UPS had a chief pilot who was over all the fleet captains assigned to each aircraft they had. He reported to a fleet captain. On the A300 fleet that there were two chief pilots, one training/standards CP and one operations CP. There were also five ACPs. He had about 99 pilots assigned to him and thought there was a total of 500 A300 pilots.

The accident FO was assigned to him, and he had known the accident captain as a crewmember off and on for 25 years; passing in the crew room, on the jumpseats, etc. The accident FO was assigned to him after the first of this year. He flew a trip with the accident FO earlier in the year, but did not recall the exact date, to ABQ as part of a normal flight; not any training or checking functions. On this flight, she was very "agreeable…someone you would want to fly with again…" He did not recall when they flew together but thought it was in the last 6 months. He flew to ABQ and she flew back and noted "…nothing significant either way…" regarding her PM/PF skills.

He had not reviewed her files since the accident. He was not aware of any letters of correction or the like in her files.

He had two conversations with her, one regarding a sick call in which she brought a note and another casual conversation regarding another sick call. The first time she brought him a letter from the doctor. After the second time, she came to him and said she had another doctor's

appointment. That was the extent of his managerial oversight of her, "she was a very agreeable person". He had access to absenteeism records and personal leaves of absence. He did not have access to training records but only a report indicating the last line check. He said currency of pilots and notification was a crew scheduling function.

He had not heard any comments or concerns about the accident FO or captain from anyone, nor had she provided any comments to him about other pilots.

An ACP review of a sick call was something that gave them an opportunity to make contact with a crewmember and see if anything was going on in their personal life, sick child, wife, etc. in an attempt to help them in some way, or get them in touch with long-term medical staff. That was really the extent of the review; they were not talking about why a pilot was sick: "if you're sick you're sick." An "ACP Review" notification "pops up" after six or seven sick calls, and he was unsure of the process now. Six to seven absences in a year would trigger a review.

He had not heard of anyone directly voicing concerns over flying the A300, just a few anecdotal comments like "what's it doing now." He never heard anyone say the airplane was unsafe, particularly related to non-precision approaches. The comments generally related to overshooting a waypoint or if the speed was not what they thought it should be. There were no comments about where pilots flew. Pilots generally tend to avoid flying trips to Mexico City and Monterrey, Mexico, due to the approach difficulties. No one had voiced any concerns about flying into BHM.

He had flown into BHM previously on the B727, and BHM used to be a "special airport" with a pictorial packet for the approaches. He thought this packet was independently produced but that it came with the Jeppesen charts. There were no such charts existing today for BHM.

There had been neither procedural changes made since the accident, nor any changes forthcoming, although he was sure that there were a lot of people looking at a lot of things.

No individual had contacted him about unstable approaches in the A300. He received quarterly reports that they could pull off airplanes showing a host of different parameters including unstable approaches. This data was generated from aircraft FOQA data by airport and frequency by airport, and that the data did not indicate any BHM unstable approaches.

Mr. Flake was shown a copy of Jeppesen approach chart BHM LOC 18 to assist in answering several questions. This approach could be flown in a "dive and drive", and if they had a constant rate of descent and there were not a lot of step downs. There was no button to push regarding vertical descent guidance such as a Glide Path but rather a computer generated (FMC) profile descent. Profile descent was his preferred method in this case, while in some other instances a dive and drive would be appropriate, like if there was weather to get under for example. Everything being equal the profile descent would be the simplest way to do it.

He had never flown the BHM LOC 18 approach, and the minimums were 1,200 feet, or 556 feet above the ground. The minimums applied to in the daylight only; night was NA. The localizer 18 was not authorized at night, and the note about VGSI guidance referred to the PAPI being

inoperative and then that procedure was not authorized at night. This was redundant considering the approach minimums stated the approach was not authorized at night anyway. Should he be contacted by a pilot inquiring about the approach he would tell them that he thought the approach was not authorized at night.

The pilots flew "…very, very, very, very few non-precision approaches" each year. In AQP they had the opportunity to demonstrate and maintain non-precision approach proficiency. He felt adequately trained because the training was "as good as it can be." They discussed it, and provided a number of methods to reach the MDA in a safe and efficient manner.

The setup was different for a non-precision approach in that you had "…a heightened awareness because you don't do as many…an element of apprehension…."

He learned about the accident by a phone call from John O'Neil, and he was told to come in.

He was assigned both captains and FOs, and he was assigned the accident FO just after the first of the year.

Pilots may be assigned a different ACP due to ACP manning levels, and he did not know who her ACP was prior to him.

He reviewed her sick call and found nothing unusual.

She did not express any concerns about fatigue or her family to him. On a flight to ABQ they had talked at length and had a general conversation and she was a "…very agreeable lady…." She mentioned that she would stay in her old bedroom at her parent's house when visiting.

He had never heard any complaints about the accident FO. She never complained to him about flying with the accident captain or any other captains.

If she had trouble in training, he would not know about it formally, just anecdotally. He clarified that special tracking did not necessarily mean a training deficiency. A pilot in special tracking would be reviewed every 6 months rather than every 12 months.

He received a report when a pilot called in fatigued, but the fatigue working group handled those.

He had never flown with the accident captain. When he jumpseated with the accident captain, the accident captain was in the right seat. He never heard anything good or bad about the accident captain's flying. He thought if a pilot had concerns about another pilot, they would not go to him but rather professional standards.

Within the last year he had flown the A300 approximately 100 hours, and that 30% was at night. He would prefer to not fly at night.

Special tracking was a training thing. He thought a crewmember could request to have more opportunities in the simulator or line checks. He said you could not look at special tracking and assume a deficiency in training.

On the line check worksheet, there was a column that would indicate if a pilot was in special tracking. He did not know the criteria for "special tracking", and he was not aware of any special tracking for the accident FO.

At least 50% of his pilots commuted, and the company had no commuting policy. He commuted from Ohio.

From professional standards to ASAP, there were a lot of different ways to get a pilot additional help. He was unaware of any professional standards issues with the accident FO. He thought she would have told him that. Her commute was a car drive to work and car drive back to her mom and dad's before going home.

He stated that "…she was a very, very, agreeable person...a delight." During their trip pairing he did not have any issues and her performance was "spot on."

The interview concluded at 1609.

### 6.0 Interviewee: Mariano Floro, A300 Check Airman, UPS

**Date: August 27, 2013**
**Location: UPS Flight Training Center; Louisville, KY**
**Time: 0820 EDT**
**Present: David Lawrence, Katherine Wilson - NTSB; Lawrence Ashby - UPS; William Middleton –IPA; Normand Bissonnette – FAA**

Mr. Floro declined representation.

During the interview, Mr. Floro stated the following:

His full name was Mariano Reyes Floro III and he was 50 years old. He was a flight qualified supervisor, an A300 captain, simulator check airman as well as an instructor in the Flight Training Department. He had been in this capacity since March 9, 2006, also his date of hire. He became a captain and instructor in 2010 but was a simulator instructor first. Within the last year he had become a check airman in the simulator. He was not an APD. He was qualified to check all seats but only in the simulator.

His total time was about 5,100 hours and he had just under 3,000 hours as PIC. He had over 600 hours in the A300, 400 hours of which were as second in command. He had flown anything from afternoon turns to morning layovers going through the sort. He flew to Canada and Mexico. He flew both seats but mostly in the left seat. He flies the line about 4 days a month. He was dual seat qualified.

He was in the US Air force for just under 24 years. He had approximately 4000 combined hours in the C130 and B52, as a crewmember on the B52 stationed in Minot. His last 7 years were spent full time in the Air National Guard as an instructor/evaluator. Flying in the guard unit based at SDF afforded him the chance to fly for UPS. He retired from the Air National Guard in 2009 as chief of safety.

He was hired at UPS as a FE on the DC 8, and then flew briefly as a captain on the DC 8 because it was being phased out. He was doing back seat check outs and also OE instruction. Once the DC8 was phased out he transitioned to the A300 as an FO, before upgrading to captain, and then working in the GOC as an ACP. He went to the right seat in the A300 because it was a glass jet and he needed to prove that he could fly it before going into the left seat. He later checked out as an A300 captain.

He initially taught ground school systems and procedures. After "seasoning" he transitioned to teaching full flight simulation in initial qualification while in the right seat. He moved to the left seat and continued teaching initial qualification and then went to CQ. His typical work schedule was 8:00 AM to 5:00 PM, but there were some late night simulation sessions. He was assigned duties to make sure systems were up to date in the simulator and non-motion trainers. He also did program development. He was currently assisting with CQ 2014 for next year; he was "learning the ropes." The 2014 CQ was currently being developed due to be completed within the next two weeks but was in a state of flux due to recent events that had happened. There was a high emphasis on mountainous terrain with non-precision approaches, go arounds or situations where go-arounds would come into play, V1 cuts, terrain, CFIT, and TCAS. Training was not on hold; it was in development. It still had to go to the FAA for approval.

There were at least 12 check airman in the A300 office. He reported to Larry Parker.

There was a monthly check airman meeting which was very informative. At the last meeting the discussion was about a proposed AOM change with respect to the ECAM, as well as a new go-around procedure to use climb thrust. The new go-around procedure was going to be the crux of next year's CQ. There was also discussion about a new stabilized approach procedure callout. The new callout would be made at 1000 feet agl and would be "1000 feet, stabilized, missed approach altitude set." There had not been problems with stabilized approaches procedures. The new callout got rid of some redundancy; they wanted to make the cockpit more efficient. The FAA was invited to the monthly instructor meetings although he did not recall the FAA being at the last meeting. Non-precision approach procedures were discussed at great lengths all of the time in those meetings. They were always trying to work more efficiently and lighten the load especially during demanding approaches and that was why they discussed them. When asked if non-precision approaches were demanding in the A300, he said no but they were not flown that often. The preferred method to land at most airfields was an ILS.

He knew the accident FO from CQ training 2 months prior. He performed day 1 of her simulator in CQ in June 2013; William Baumann did her second day of the simulator. Day 1 in the simulator included the "first look" training which was a LOFT simulation and there was no instruction given in order for them to see how their program was going. The session started in PHL holding short of 9 right. There was nothing wrong with the airplane. The crew was planning

to fly to EWR. After takeoff there was a route modification followed by an autothrottle failure. The crew must divert back to PHL for an ILS. After the first landing they were repositioned for an RNAV GPS for 9 Right. During the GPS approach the crew encountered a windshear event. During this training the accident FO was paired with Capt. Albert Vacca.

The accident FO's overall performance was good. She was very professional and always prepared. He also taught her in initial qual and she was always prepared and had a lot of questions. Her procedures were good and she had no issues in CQ. The crew pairing during training was a "bit off" because it was the first time the crew had flown together, but after about 5 minutes the two were better synched. The accident FO had a pretty good southern drawl and was from Tennessee and the captain was a "straight-laced Air Force pilot." There was a difference in how things went; it was not conflicting but it was more when were they going to get in sync. When getting jammed, things get hectic. The captain was seasoned and kept the crew in sync as far as where they were supposed to be going. The accident FO was the PF for the RNAV approach. She executed a missed approach due to the windshear on the approach. She saw the windshear on the radar, discontinued the approach and executed the go around. Either pilot could call a missed approach. She set up for the approach per UPS SOP. There were no techniques used to set up with approach.

He never flew with the accident first officer on the line as their schedules never coincided. He had intended to fly with her but never did. Asked why he intended to fly with her, he said when he trained someone he wanted to go fly with them. She had no issues with CRM or callouts in the cockpit. The only things he noted in her initial training were V1 cuts. She let her airspeed get too fast on climb outs. During a non-precision approach she did set things up correctly but he made her perform the approach again because he wanted to make sure she had a full understanding of the procedure. He was unsure if she had the knowledge of what was happening. On the repeat she did fine. Once he did this he was convinced that she knew what she was doing. This error was made during initial training.

He made comments about her progress during training in ATMS. They had a grading scale to see how errors were mitigated or fixed. It was a 4-point system. If the pilot or crew did not mitigate the errors or if there was an instructor intervention, there would have to be an instructor comment. There was also a category to indicate if it was a knowledge or procedures issue. He recalled only making comments during initial training. She had no problems in CQ. Comments were retained in the students' files. These comments were necessary in case of an instructor change, especially during her initial training when another instructor had to fill in for him. The comments were available for the next instructor to review and see what to focus on.

He stated during initial training that students performed many non-precision approaches and went all the way back to procedures. Procedures were trained in the VPT prior to getting in the simulator and then were reinforced in the simulator. He stated there were 2 non-precision approaches that occurred in CQ – one in the simulator and one in LOE. During the LOE there was 1 of 3 RNAV approaches that the students may see. It was triggered due to the time/day and there was some leeway for the instructor to keep it fluid. RNAV approaches were preferred to be flown in profile. Hardly any approaches were flown in vertical speed and he had not seen any crewmembers fly vertical speed.

There was only one occurrence where there was a mixture of vertical speed and profile approaches. This occurred if you had a final approach fix that was above the glideslope intercept altitude path. They used vertical speed at 1000 fpm and then engage the profile mode. There was not a procedure to capture a localizer from above. He said that goes against what chapter 4 of the AOM stated. The culture of their training was "not to rush". UPS pilots were trained to have everything set up prior to the final approach fix so that a pilot did not have to rush. They tried to have everything set up or use automation to its fullest extent. The FMC would compute the descent angle and took out the human element to calculate the manual descent. Profile mode allowed the crewmember to better be able to communicate and monitor things. A discontinued approach or go around should be performed if a pilot got high.

When asked what the PF was supposed to look at during a non-precision approach, he stated that the PF had to make sure all the equipment was set up correctly. He discussed the use of the non-precision approach briefing guide. If the captain was the PF, he would have many things to check on the MCP. The captain would have to talk about the limits of the approach. The captain would have to be fully configured prior to the final approach fix. If the lateral deviation exceeded .2 NM a missed approach would be required. The duties of the PF were to monitor the instruments and make sure the instruments coincided with the approach plate. Any intermediate altitude not built in there could be determined with air track distance to the runway. They would follow everything down to the MDA.

When shown the approach plate for the BHM LOC 18 he stated the minimums were based upon day or night. He asked when he would be flying the LOC 18 approach. He would not fly this approach at night due to the N/A annotation. If he flew the approach during the day, he would fly it to a DA. He would have to look at the NOTAMS to determine if this was a legal approach at any time. He stated the NOTAMS could be found in the flight departure paperwork as well as the flight ops web site.

When asked about the call outs from the airplane as well as the pilots, he explained the automatic calls the aircraft would make for this approach. The airplane would be fully configured and that the landing checklist would be completed. He stated that the missed approach altitude would be set. As a technique he said he would make sure that the FMA annotated P descent. He discussed the colors of the FMAs. Green ALT and blue "Pdes." He explained that they should have the Prog page up so that they could verify distance and GPS status. He talked about the flashing Pdes and then the 1000' call. He said 3 miles out they would have to verify the altitude at the step down fix. He discussed the 500 foot call and how it may not be heard. If they decided to perform a go around they would not hear the 500 foot call. Approaching minimums, the PM would call out "100 above." The PF would begin looking in and out so that at the MDA he could make the land or go-around call – "go around thrust, flaps" or "landing."

When asked what the PF should do when the "approaching minimums" call was made, he said the PF should begin looking out. The autopilot would be on until 50 feet below MDA. The PF would tell the PM "landing" and he must disconnect the autopilot. If the PF forgot to turn off the autopilot, the PM would alert him. At the MDA, the autopilot would disconnect, the command bars would begin to flash, and the airplane would revert to vertical speed mode. The MDA was

the only number that should be placed in the approach page. For BHM LOC18, the MDA would be 1380. He did not know why any other number would be placed in the box. The person responsible for setting up the FMS was the PF. He had never seen anyone placing a different number on the approach page and it was not an approved technique.

A few pilots were using the EFB[2]. Pilots on the approved program had gone through training. The projected date for all pilots to transition to EFBs was January 2014. He was not one of those crewmembers. The accident FO was not one of those crewmembers.

When asked about CRM training, he stated the program was continuing and evolving. Communication was the bottom line. The flight training department wanted everyone talking so errors can be trapped – what the threats were, what they posed to them, and how to not let them be an impact in the cockpit. The AOM had examples of what the crew should brief. They made sure risks were mitigated. There were two places where CRM was briefed – one when briefing in the chocks and then the next as you taxied out before the takeoff checklist, to make sure all were in the right mindset. A lot of pilots were open and seasoned; the culture was pretty well set in how everyone was expected to operate. He discussed the posters which talk about communication and what their crewmembers were supposed to do. They would discuss trying to mitigate threats using the layers of defense. They did a facilitated debrief. He discussed the concept of their campaign using "Max Threat." They tried to get pilots to understand how to use CRM to get rid of Max. CRM training was very well and alive.

When asked if fatigue should be discussed prior to takeoff, he said was not required but that crewmembers he flew with did it. Crewmembers were very aware of fatigue. The crewmembers knew what to do when they were fatigued. He had never made a fatigue call but as an ACP, he had worked fatigue calls and said that his duties were to follow up and discover what happened. They did not want this to become a recurrent action. There are dedicated individuals to help work the problem. The crewmembers were removed from the trip, and that they have the option to come back and pick up the trip. There were ACPs that were dedicated to helping the pilots. Scheduling would let them know about a fatigue call so they could give the ACPs a heads up.

He was not personally involved in training fatigue but crewmembers were made aware of it through general subjects. They were reinforced through training. Some pilots were "iron men" and he had never heard of them; they just flew their line. They wanted to make sure that pilots knew there was a fall back if they were fatigued. It was taught on the first day of general subjects in CQ.

He did not think an event presented itself that allowed the accident FO to make a go around call. He believed that she would make that call if necessary. There was go around training in initial.

He did not know the accident captain. He did see him when he came through training.

He had only heard good things about the FO. A friend of his who flew with her the week before the accident had told him that she was "top shelf"

[2] Electronic flight bag

He said Mexico flying was challenging. Mexico City was at a high altitude. The high terrain and mountains and speed restrictions made the approach challenging. They wanted to make sure pilots were ahead of the jet. The pollution and the weather were also issues, as were the landing and rollout. The ILS frequency was not as strong coming in. There was training in initial training about Mexico on LOS 4.

To his knowledge, the accident FO had not asked for extra training.

He discussed the briefing guide and what was in it. He discussed who read it and what to read.

He discussed the use of the prog page distance. It would give a crew SA on the approach, and gave range and bearing to the runway so you had an idea for the 3:1 to the runway. It would not be used to monitor the approach. It would be up if flying an RNAV GPS and looking for the primary GPS loss.

The MDA would be put in the takeoff and approach pages of the FMS. The system would display the actual glidepath angle.

The briefing guide would ensure who was going to be monitoring what. The VNI switches would be set to ILS to get the CDI angle. Ground speed with descent angle would be computed and adjusted as they went down. VDP was based on the approach end of the runway. He discussed callouts to ensure staying above minimums.

Vertical speed should be between 700-800 fpm.

The dive and drive in the industry was being discouraged. UPS followed that same rule that and it was highly recommended that they fly with a computed rate of descent to a visual descent point. Dive and drive did not ensure adequate clearance when down in the low altitude regime. They did not teach that.

The airplane would not give automated callouts during the approach or call out approaching minimums. It would call out 100, 50, 30, 20, and 10 feet above the ground. It was very critical that the PM monitor the approach make the required call outs. He stated that these call outs were critical. The PM should give trend information with winds or how the approach was going. He had not seen crewmembers not make the PM required callouts in CQ. In CQ the pilots were highly prepared.

Most pilots would use the profile approach. He once saw a pilot choose vertical speed over profile about 2.5 years ago. The student had transitioned over from the MD11. He did the vertical speed approach in LOE and did it flawless.

All the pilots could fly a vertical speed approach without a briefing guide. He thought only 80% of the crewmembers could fly a profile approach but would have to reference the briefing guide to make sure everything was correct. They all used it. He had yet to see anyone not use it. He was confident that the instructors could fly the approach without the briefing card.

He had flown into BHM, but never landed on 18. It was on the DC8.

He had not seen any pilots fall asleep in the airplane.

The last time he had flown a localizer approach was into Rockford in December 2012. That same winter he flew an ILS glideslope out into SDF.

The interview concluded at 0945.

### 7.0 Interviewee: Phillip Millett, A300 Captain, UPS

**Date: August 27, 2013**
**Location: UPS Flight Training Center; Louisville, KY**
**Time: 0955 EDT**
**Present: David Lawrence, Katherine Wilson - NTSB; Lawrence Ashby - UPS; William Middleton –IPA; Normand Bissonnette – FAA**

Capt. Millett was represented by Kathy Yodice, Yodice and Associates.

During the interview, Capt. Millett stated the following:

His name was Phillip Michael Millett, and he was 46 years old. He was an A300 captain and flight instructor simulator. He did not do IOE, just the simulator. He was not a check airman in the simulator. His DOH at UPS was January 2, 1996, and had been an instructor since February 2004. He had about 9,800 hours total time, half of which was as PIC. He broke down his total time as 4000 hours in the C130, 1800 hours in the B757/767, and about 3,200 hours in the A300. He had about 1400 hours as PIC in the A300.

His background was primarily military with some active duty in US Air Force. He flew the C130 for the Air National Guard (ANG) in Anchorage, and Kentucky Air National Guard SDF, and was still the chief pilot there. He was also a civilian flight instructor.

He knew the accident captain more than the accident FO. He flew with the accident captain for 13 segments in August 2010.

He had a weekend layover with the accident FO. They flew only 2 legs but he felt like he kind of knew her before they flew together because he had flown with Billy Moody, who knew her really well.

He flew with the accident captain and also had him in the simulator. He was going through his notes and thought he might have done seat support in the simulator.

The accident captain was an extremely likeable guy. They flew to Denver, Rockford, and Billings. His experiences with the accident captain were positive; he was a professional crewmember and did the job as he would have wanted it done himself. He was good from a CRM aspect and good from a procedural aspect.

The accident captain did not mention any concerns about flying the airplane or issues at home.

He logged 13 landings with the accident captain and said they typically alternated legs. He did not remember anything as being outstanding either good or bad. He typically remembered the bad stuff and the few guys who he thought were exceptional. It had been 3 years since they had flown together and nothing came to his mind.

He flew with the accident FO on June 29, 2013. It was a Saturday morning and they flew SDF to Sioux Falls. They faced a lot of unique challenges, one being operating to a non-towered airport. They arrived just as the tower was opening; the tower operator was there but it was not officially open. The tower operator gave them regular tower service anyway. They set up for the ILS to runway 21. The winds were out of the north so they swapped everything around to the LOC GS inop for runway 3. They did a visual approach, and he was the pilot flying. He saw a lot of runway swaps at the last minute.

He remembered the accident FO loaded the approach into the FMC. In position 5 right, it was the place to put in the MDA; however, the accident FO put in the field elevation. He told her that the procedure said to put in the MDA. Typically the PM loaded the approach and the PF verified then briefed it. When he did his briefing, he asked her about it. She said they were conducting a visual approach and so she entered in the field elevation to give guidance all the way to the runway. He told her that while this might be a valid visual technique that was not how they did it. She took his input.

He thought the accident crew had to be flying in vertical speed or profile. . He called and left a voice mail the next day because there are only 2 ways to have the autopilot engaged to impact, V/S or what Shanda did. That could be a big deal if the autopilot was on until impact. It was the first he had ever heard about it.

They did not shoot any non-precision approaches during their trip pairing. They flew the ILS 17R into SDF. She flew that leg and did the landing.

He had seen one other pilot enter in an altitude other than MDA in the FMC. It was a pilot who had been on the airplane a long time. Being in the school house for so long, he saw or heard about them. Someone had showed her that technique and he was surprised by it; 99% of pilots did the technique as published in the AOM.

She told him the advantage of entering field elevation into the FMC was that flight director guidance would be provided to touch down zone elevation. The autopilot would not know to kick off until that altitude.

The flight director would not flash and the autopilot would not kick off. He had taught pilots over the years that when they reached 50 feet below the MDA to bring up the flight path vector and use that as a reference on the ADI. If that was done, they would not get a sink rate alert or get low. Another technique was to use vertical speed and he would ask the PM to give him 700-

800 fpm down. Then they would not follow the flight path angle and would get 4 reds on the VASI and busted the type ride.

The accident FO did make a point to tell him that she was new to the airplane and had trained on several different airplanes. Since she pointed that out to him in the ready room, he thought she did a good job; he did not have any issues at all. She made all of the required call outs.

He thought her overall flying ability was fine.

The pilot group was small and there were not many women. There was a Nashville pilot group of about 10 A300 pilots that lived in that area. He had heard of the accident FO through other people and felt like he knew her. He had not heard anything specific about her flying. He had not heard any pilots mention anything good or bad about her flying.

He got the impression she had a lot going on at home – a farm, animals, trying to sell a horse. They did not spend any time together during the pairing other than in cockpit. She did not go to dinner with him. He learned that she had been married three times. They had a weekend layover, arriving Saturday morning and departing Monday night. He did not see her over the weekend. He thought she picked up another trip on Tuesday morning after that but it was not the same one he was on. He did not recall seeing her go to rest areas during the sort.

The last time he did a significant amount of instruction was in 2010. A pilot failed to activate approach, and set wrong minimums. There was no question that if you followed the briefing guide and followed it correctly, you will be safe. There is a margin for error.

The tried to impress during that in the cockpit they did not have any constraints. In the simulator, they had constraints to get everything done. Common errors he saw related to non-precision approaches was pilots setting the wrong minimums. On the Jepp, the ball note may not be in the same spot. It would not be a bust but it would be a debrief item. Pilots would interpret the wrong minimums, like the LPV minimums. On vertical speed approaches, there was more margins of error. Pilots would have to determine where to read the DME. It can be a confusing approach.

It seemed like a mistake where pilots would hit the profile and flaps at 15/15 and get slow. Otherwise it would be in profile descent mode.

A vertical path could be intercepted from above using vertical speed but it was not preferred. A pilot could get behind; but as long as the flight was stabilized by 1000 feet. At least 5 years ago in training he brought a pilot in high, but it was to an ILS. It happened coming into SDF but it was usually in visual conditions.

Nothing came to mind where he had been rushing during in an approach. He would rather be slow and ready than hurried.

When flying a profile approach, the procedure changed; they could not arm profile until fully configured and at final approach altitude. Now they could arm it anytime they were in the approach segment. It was a little more liberal now. It did not make any difference in his opinion,

but you had to arm it at some point. He had seen guys not arm the profile. He caught the mistake himself and they went around. He flew it right the first time.

Over the course of a year, he was at the bottom of the bid list so he did pairings that others did not want; doing a non-precision approach was a function of where you went. He had probably done it 6 times this year. There was only 1 approach where they could not do a profile approach, into Monterrey.

He had flown into BHM but he had never done LOC 18. He had never known anyone to land on that runway.

He did not see the accident FO during the weekend layover during their pairing. She told him she did not do a lot but went to the falls and went jogging. He did not have any concerns about her not being rested. When he flew with her friend, FO Moody, he had not mentioned any concerns that the accident FO might have had about her rest or schedules.

Regarding her CRM during the pairing, he said when he first met the accident FO, she came off as having an abrasive personality but he clicked with her and they go along well. Her CRM was fine.

He thought she would call for a go-around if needed.

He thought her greatest strength as a pilot was her ability to compartmentalize the information she had from the different fleet training programs. Her AOM procedures were all fine. As far as her stick and rudder skills and decision making, it was all fine, she was good. He could not think of an area that she could improve on.

When he flew with the accident captain, and the accident captain was the captain. He thought he had flown with the accident captain when he was an FO but he looked in his logbook and there was nothing. The accident captain took a long time to upgrade. That was typical for pilots who commuted otherwise they would never be home.

He had never made a fatigue call.

On certain occasions he would brief fatigue. He had shown up for a flight and told the other pilot that he had tried going to bed early, but couldn't sleep.

If the PM missed callouts, he would call them himself. It was not common but it happened. As PF, he would be monitoring the altitude and was not just relying on the PM.

He thought manipulating the autopilot could be more difficult than hand flying it.

90% of pilots did the profile approach, but a few pilots would not do it; it was just a couple, not many. Vertical speed was what they knew and what they were going to do. On the line, 99% of time pilots pulled the briefing guide.

Looking at the BHM LOC18 approach chart, he said they were not authorized to fly that approach, and he was not going to fly it at night. Then he would read the notes which in this case were confusing. He would say that this approach could not be flown in night IMC conditions. There was definitely conflicting guidance on the chart. In daytime IMC, he would fly it in profile. When he saw a 3.28 glide path, it should make you aware that something was going on there. It was similar to landing on runway 33 in Burbank; it was not your normal approach there and you had to be on top of your game. Upon further examination of the LOC18 chart, he said there was some terrain close in. The Roanoke LDA approach was steep at over 3 degrees. He was sure they flew other non-precision approaches but he could not come up with an example. They had probably flown one in training; maybe not 3.28 degrees but definitely over 3.0 which was over the normal. Runway 6 in Cleveland was a steep one.

The interview concluded at 1048.

## 8.0 Interviewee: Peter Laurentz, Flight Standards and Training Manager, UPS

**Date: 27 August, 2013**
**Location: UPS Flight Training Center; Louisville, KY**
**Time: 1400 EDT**
**Present: David Lawrence, Katherine Wilson - NTSB; Lawrence Ashby - UPS; William Middleton –IPA; Normand Bissonnette – FAA**

Capt. Laurentz declined representation.

During the interview Capt. Laurentz stated the following:

He was 52 years old and had been the Flight Standards and Training Manager for the last 2 ½ years. He had been employed by UPS for 23 years. Previous UPS positions held include Director of Operations, Corporate Schools Instructor, System Chief Pilot, Labor, Crew Resources, Check Airman, Flight Standards, Training, B727 Check Airman, and Line Pilot (October, 1990). Prior to UPS he was a US Navy pilot for 6 ½ years.

He was current and qualified on the MD 11with a total time of 4000 hours and PIC time of 2500 hours.

His roles and responsibilities included all FAA approved and accepted flight manuals, authoring, producing and distribution; simulator maintenance; developing training programs for flight crewmembers; and providing ground, simulator and aircraft training.

He reported to District Manager Matt Capazolli. The following positions reported to Capt. Laurentz – 4 Fleet Standards and Training Managers who developed and deployed training programs; a Records and Publications Manager, a Quality Assurance Manager, a Program Development Manager, a General Subjects Manager, and a Simulator Maintenance Manager.

He held monthly meetings with his managers and each manager held meetings with his supervisors. These meetings were held at the fleet level and occurred monthly. He also had a monthly meeting with his manager, which occurred earlier this month.

Fleet specific concerns were not generally discussed at the District Manager's level. The Director of Operations level manages risk and concerns to the organization. The Flight Safety Council process had smaller working groups below it that identified and mitigated risk then communicated to the Director of Operations, Training Manager and Chief Pilot. The head of the Flight Safety Council was the Director of Operations, as he was responsible for all risks to the operation and the council was made up of managers who identified and mitigated risk and reported to the DO so he understood what was going on in his operation.

FOQA and ASAP data was used by the Flight Safety Council and Flight Safety Group that could develop a mitigating strategy; that strategy might be training. Fleet Standards and Training Managers and Program Development looked at the data when developing current and future training programs. It was all based on the data.

The A300 2013 CQ syllabus contained a discussion and practice of non-precision approaches. AQP data was relatively consistent across all fleets and indicated that non-precision approaches were more challenging than an ILS approach so they trained them more often. He was not certain if FOQA or ASAP data indicated an issue with non-precision approaches; he could not pin point an event or cluster of events that pointed to an issue but AQP data would support the training.

He further stated that FOQA data indicated that all fleets were trending better on stabilized approaches both at 1000 feet and 500 feet. UPS modified stabilized approach criteria to require all flights be stable at 1000 feet regardless of in VMC or IMC conditions. He stated that he thought this change was less complicated, more in line with the industry philosophy in general and at 500 feet they did not want pilots to be trying to salvage an approach.

His last flight on the MD-11 was approximately 2 months ago. He had never flown the A300, only the B727 and MD-11. His flight schedule varied.

When asked if he was aware of any operations or training issues on the A300, he stated that the fleet was potentially changing the go-around procedure, as it was not a very benign pitch up moment, to allow the use of climb thrust as opposed to full go-around thrust. This had not been instituted yet and it may or may not get approved. He further stated that he was not aware of any operations or training issues with non-precision approaches and that there were no unique issues with the A300. A non-precision approach briefing guide was developed a couple years ago as an aid in response to some of the AQP data. There was no simple non-precision approach when compared to a precision approach. Most people on the flight operations side have flown more than 1 aircraft so they have a good comparison.

Risk analysis was incorporated in training. A risk matrix had been developed to measure the severity and probability of issues and they put their money on the highest risks. They looked at

current and past AQP data. Non-precision approaches had had a risk analysis completed in addition to other data they were collecting.

Non-precision approaches were not performed very frequently. Some pilots may see a couple non-precision approaches a month but that was rare. The schedules were relatively stable, so if someone lived in San Antonio and San Antonio had only non-precision approaches available then they would fly them more frequently. The average pilot did not fly very many non-precision approaches. Lack of frequency and relative complexity make it more challenging. Non-precision approaches were more complex on the MD-11 than ILS approaches, which only required 2 or 3 button pushes and it was all automatic all the way to the ground. Non-precision approaches required multiple, sometimes 4 to 5 button pushes in the correct sequence. Procedures for an ILS glideslope out of service were different than those for a RNAV GPS approach and while none were overly difficult but if done in the wrong sequence the aircraft may not descend at the final approach fix. Ensuring proficiency was not a challenge but a responsibility. Aids to maintaining proficiency were briefing guides and training. Pilots left the training center proficient, they met the qualification standards and if they needed additional time, they were trained to proficiency and had the tools provided.

CQ CRM was interwoven in all training as opposed to having an off–the-shelf course. He was not responsible for dispatcher training; however some joint dispatcher/pilot initial CRM training was conducted if a dispatcher was available. Dispatch training was under Denny Faulk.

His biggest challenge was ensuring standardization across all fleets. The program development department had been primarily staffed with program developers as opposed to pilots. Standardization was important as it related to being able to assess data from one fleet to another and building in efficiencies for the airline. Standardization in training methodologies, callouts and procedures led to inherently facilitating safety as pilots did not have to relearn a new procedure on similar equipment. They wanted to leverage similarities and have an opportunity to grow into a robust level of standardization.

He did not become involved in the Fatigue Safety Action Group, however he did have individuals in his group who provided him with information that they tried to blend into continuing qualification and long term training programs. Fatigue awareness and remediation strategies were included in both IQ and CQ ground school. He was not aware of any additional emphasis on fatigue training. They assess it every year but he did not think it was being incorporated into training in 2014.

When asked if there was any data or concerns that he had been asked to incorporate in A300 training for 2014 or the last couple of years, he responded that additional go-around training and loss of control in a go-around were covered thoroughly to mitigate risk. A lot of CQ training was not A300 specific and items that they emphasized included non-precision approaches, V1 cuts, go-arounds, TCAS and CFIT. Go-arounds were the only unique A300 issue.

He knew the accident captain who was hired 2 weeks after him and was a student of his on the B727 in the mid 90's. He knew of no concerns with the accident pilots. He knew the accident captain by name and face but lost track of him over the years. After the accident he asked the

records manager about him and was told he had no training issues. He did not review the accident crew's training records after the accident. There were no substandard events for either accident pilot and neither were in special tracking.

When asked about what certificates he held he stated, ATP with type ratings on the MD-11, B727 and BE-99 along with a B727 FE rating. He could not remember the last non-precision approach he had flown in the aircraft.

He had flown lots of visual approaches and could not remember the last time he flew a localizer non-precision approach.

Pilots that had more difficulty in training or required additional time were handled in the following order from the most benign: debrief – if it was appropriate. If the pilot knew the information, knew what to do and for example turned left when he should have turned right; repeat – more significant items required a repeat, however AQP allowed only so many repeats; special tracking – if a failure occurred, a need for additional time or they were recommended for it, special tracking allowed additional training at the 6 month mark for A300 and B757/767 pilots; and failed event – required additional training, checking and special tracking

Only 1%-2% of pilots actually failed an LOE and all pilots could have 1 bad day. In the past if a crew member failed an event on V1 cuts and go-arounds then they would re-train V1 cuts and go-arounds and then re-check. Then in the next checking event the pilot may fail not only V1 cuts and go-arounds but also TCAS and CRM. Then they would train up really good on those specific areas and if an additional failure occurred, the FAA would become interested and potentially a 709 ride would occur. While it was possible to have a bad day at the office it was highly unlikely to have 2 bad days at the office.

If a failure occurred they would provide significant training in the areas where there was deficiency. Most pilots would be rechecked with no issues, however if a second failure occurred then the pilot would be put through special tracking and an entire upgrade program. He said "we don't want to just fill the holes" but they wanted to "repave the whole road." Since they had done that they had had zero additional failures. Some pilots had chosen to go on long term medical.

Special tracking varied by fleet. He thought that about 15 A300 pilots were in special tracking, however, the accident crew was not one of them.

Concerning the restructure of the training and standards department, he worked as Training Manager, then System Chief Pilot, then Director of Operations and then Training Manager again. During that time, Training and Standards were split. As Director of Operations it did not seem intuitive to him. ATOS required one person to be responsible for training but UPS had two. Because functions were separate there were duplicate efforts and the potential for things to fall between the cracks. Now there was one division manager responsible for development, quality and content of training. Dotted lines existed when ACPs conducted line checks or OE as they still reported to the chief pilot but were looked at like a "vendor." The training department was still responsible for all training, standardization, their data collection and check airman training

but the ACP was a vendor. If the data collection was not the quality, fidelity or consistency that was desired then the Training Manager could correct this through retraining. There were advantages to having the check airman all fall under one manager but then there may be 50 people reporting to one manager and that may be unmanageable. UPS may or may not stay with this structure.

Capt. Laurentz was not aware of any issues but said he could see where there could be an issue with a line pilot receiving a line check or a training function from a check airman who was also his administrative supervisor (ACP). They had a good relationship with the IPA training and standards side and this concept had been in place for more than 8 years in the flight district and perhaps the concerns had been mitigated or vetted out. In the UPS corporate culture, this structure was not foreign and was common. Pilots had many avenues to voice concerns – ASAP reports, IPA, chief pilot's office about a check airman wearing two hats. This was a little unusual relative to the rest of the industry.

The A300 was on a R12 CQ training cycle and at this point the data did not indicate a need for change or a remediation strategy although that was evaluated and considered. There were 3 major changes to the training department which included the merger of training and standards. Additionally, the creation of Program Development with 4-5 professional developers, 2 supervisors and probably the best manager (dispatch and IE background). This was now the hub of the training center. Program development now evaluated changes to a program such as frequency or event sets and the group applied an ISD approach to analysis. Pilots were typically solution based, and then looked backwards to justify what they knew in their gut was the right answer. Program development will look at data and assess the reasons, develop a mitigating strategy and determine the appropriate training device for the issue. Quality Assurance was now a standalone department assessing standardization across fleets and calibration of check airman and instructors. Quality Assurance measured how effective the remediation strategy was. Program Development was now helping the fleets to determine what success looked like. Quality Assurance determined whether program development was hitting the target, but at the end of the day the fleets own the training program.

He flew with the accident captain when the accident captain was a FO on the B727 in the 1990's but he had no memory of him good or bad.

Capt. Laurentz commented that the reason the accident captain had relatively low flight time (8500 hours) was due to the nature of the business. The accident captain was a flight engineer for 4-5 years, then flew the B727 which was called the "lawn dart" because of the short legs it flew (such as Louisville to Columbus, OH). The A300 had become more of a domestic aircraft taking over some of the B727 and DC 8 flights and did not have the long international flights.

The interview concluded at 1453.

## 9.0 Interviewee: Ronald Flynn, A300 Ground Instructor, UPS

**Date: August 27, 2013**
**Location: UPS Flight Training Center; Louisville, KY**

**Time: 1509 EDT**
**Present: David Lawrence, Katherine Wilson - NTSB; Lawrence Ashby - UPS; William Middleton –IPA; Normand Bissonnette – FAA**

Mr. Flynn declined representation.

During the interview, Mr. Flynn stated the following:

His full name was Ronald Mark Flynn and he was 41 years old. At the time of the accident, he was employed by UPS as an A300 Ground Instructor and had been since January, 2012. He taught systems and procedures. Previously he was a ground instructor for Republic Airways teaching systems and general indoctrination on the EMB 170/190. Prior to UPS, he had worked at Mountain Air Cargo for 8 years, Gemini for 6 months before being furloughed for 2 years, then as an Aircraft Specialist for a Part 135 operator before being furloughed for 1 year. He held an ATP certificate with ATR 42/72, F27, MD-11, and King Air 300 type ratings.

His total pilot time was 3,800 hours, with 2,200 hours as PIC. He had no flight time in the A300, no flight time at UPS, and just a few hours in the MD-11 at Gemini.

He did observation flights at UPS approximately once a month. He would observe procedures done by the crew. There was no checking involved. He would just provide ground instruction, no evaluation.

He taught Initial Qualification and Continuing Qualification systems and procedures utilizing the VPT. His typical schedule has changed. When he was hired they had lots of initial training but that had slowed since October and now only taught initial every other quarter. He predominantly did CQ.

He knew the accident crew, and he had taught them both in CQ on June 24, 2013. He thought they were in the same class. It was just the CQ Forum itself that they went through together. He provided them recurrent training. They asked good questions and there were "no true alarms or anything" They were good students and were "always in the books." He only saw them one day in the afternoon, teaching them systems and "hot topics" and things they had not touched on in a while. It generally lasted 4 hours and done in the classroom environment.

He had no interaction with the accident captain other than the usual common courtesies. Training was the first time he had met the captain. He was very neat. He said the captain had personally thanked him after class and told him he had done a nice job.

He first met the accident FO during her initial training while he was observing the training in spring 2012. They had general conversations and discovered that they had many things in common. She was a "…good all-around person…very, very knowledgeable in class." She was always asking questions in class and always studying.

The way he taught was that he would ask "help me understand why" so he could get an understanding of where students were at with the material.

He did not instruct her in the procedures trainer.

They exchanged some text messages concerning their commonalities, but she expressed no concerns regarding the A300.

He taught non-precision approaches in the VPT. They had a workshop prior to getting in the VPT where they explain all the ins and outs of non-precision approaches both in profile and vertical speed modes; the next day they would apply the knowledge they learned in a scripted VPT. From the VPT they go to the simulator.

He taught two ways to fly non-precision approaches, and "…initially the student will grasp the vertical speed method because they are manipulating the controls…while the Profile approach is more programming into the box and letting it fly the aircraft." The preferred method was the profile approach; it was safe and not a dive and drive approach. They told students that the vertical speed approach was rarely used. It could be used to capture a glideslope/path from above. The only time they would combine vertical speed and profile methods was if capturing a path from above and would turn the vertical speed down 1000 fpm and then arm the profile; this was only used on an ILS with glideslope out of service.

A common mistake when flying a non-precision approach was not configuring early enough prior to the final approach fix. Then they would have to do a missed approach.

A "gotcha" for non-precision approaches was that the autopilot disengaged 50 feet below MDA, and then reverted to heading and vertical speed mode. This could be an issue for pilots as they were used to flying an ILS with the autopilot engaged "…all the way to the bottom…there could be a startle factor…."

One of the most common errors when "setting up" the non-precision approach was trying to figure out if the approach was a "DDA or MDA"

The Jeppesen BHM LOC 18 Approach chart was given to Mr. Flynn to assist him in answering further questions. Should he give this approach to a student in the VPT he would expect that student to tell him that they could not fly this approach at night because of the "NA" on the night approach minimums; it was not applicable. He would request a different approach.

The "VGSI" note on the approach chart meant that "…if you do not have those visual guides then you cannot fly this visual approach…you could not fly this approach at night." It was misleading because of the NA note but in his opinion it would not be legal at night. He said that since there was not a "feather" on the approach chart that it could be flown to a DDA.

If you crossed BASKN high then you would have to make a missed approach; that was in their AOM, PTG, several places, that if you did not capture the path at the final approach fix that you should do a missed approach. A pilot could not use the vertical speed to go down and catch the path.

"Hot Topics" included fuel, V speeds, and batteries on with APU running; nothing concerning non-precision approaches was slated for 2013 but he thought it was in 2014.

He clarified that he did not teach general subjects.

He had not taught nor heard it taught a procedure to enter field elevation vice MDA in the appropriate area. It was bad practice and he would correct that person on the spot. It would be dangerous.

They did CRM training constantly telling crewmembers that they needed to talk to each other; they did the "Kumbaya talk" before the flight. The VPT was ran just like a normal flight.

They talked a little bit about fatigue, but it was a general topics subject; they emphasized that you need to be rested. It was not in the coursework but rather in topics that came up in conversation.

The accident crew had neither CRM problems nor knowledge test issues. He had never had anyone not pass; they may miss a few questions but would still be within passing parameters. He would make sure they understood what they missed.

The accident FO never voiced any concerns about her family, getting rest, or the routes she flew.

Observations he performed were based on his schedule. He did cockpit observation flights from the jumpseat, approximately 30-40. Last year, they were having issues with ABQ so he flew out there and saw the approach. If he was teaching it in recurrent, he wanted to be able to talk about it. He never observed a non-precision approach, and most of the observations (two-thirds) were in daylight. There were no flights that went out and operated completely at night that he had gone on. A flight might start at 0430 when it was dark but end during the day.

There were questions related to non-precision approaches in the self-study home study. They did not touch it in their forum what they taught in class. The knowledge validation was only based on what they taught in the class.

They taught vertical speed initially in workshop 3.

If profile was out, they would use descent angle and ground speed. It would be briefed prior to commencing the approach. The PM would verify that they were meeting the step down fix altitudes. Ground speed would be about 135 knots, and 750-775 fpm on a 3 degree glidepath.

He would add the scores from the knowledge validation into ATMS; he clarified that he would enter pass/fail but not the score.

There were non-precision approach questions in the ATMS post-test.

He described his briefing of the BHM LOC 18 approach.

He did observation flights in the jumpseat as did all instructors. They had slated "go fly" days. The callouts on non-precision approaches were very critical as it gave you a good verbal backup for where you were in the vertical descent profile. If you were in profile, you would be on a constant rate of descent and you would want to make sure you were clearing the fixes.

He stated the precision approach/non-precision approach deviation GA criteria, and that it was written in the AOM and PTG. If a flight was more than one dot high or low, they should do a go around. Also a 1 tick mark deviation on the VDI[3] required a go around.

The interview concluded at 1600.

**10.0 Interviewee: William Baumann, A300 Simulator Instructor/Evaluator, UPS**

**Date: August 28, 2013**
**Location: UPS Flight Training Center; Louisville, KY**
**Time: 0800 EDT**
**Present: David Lawrence, Katherine Wilson - NTSB; Lawrence Ashby - UPS; William Middleton –IPA; Normand Bissonnette – FAA**

Capt. Baumann declined representation.

During the interview Capt. Baumann stated the following:

His name was William S. Baumann and he was 68 years old. He had been with UPS since June 1, 1988. His current position was A300 Simulator Instructor/Evaluator. His aviation background included flying for the commuter airline Midstate Airlines in Wisconsin flying Beech 18's and 99's as well as the Metroliner 2; Lockheed Aircraft in Saudi Arabia flying King Air 200; Lear Jet for 5 years flying and then in Human Resources in Austin, Texas; and Evergreen International flying B727 and DC-8 as a captain and management. At UPS, he flew the DC-8 in flight standards and training doing overwater and international checks, then went to the Flight Training Center in the DC-8 for 6 months, then he went to the B747 on the training side teaching initial and SVT[4], back to the DC-8 in Standards doing line checks, and then to the A300 in training and received his type rating October 2009. He had flown the A300 for about 200 hours on the line to qualify for check airman, and had about 300 hours total in the airplane.

His total time was between 15,000 and 20,000 hours, with most of that time as PIC. He had about 300 hours PIC time in the A300.

He did not know either accident crewmember. He had the accident FO for the maneuvers validation (MV) and LOE, and did not know the accident captain at all.

He provided training and evaluation for the accident FO on June 26, 2013, on day 3 of CQ. The training included a MV, SPOT training which covered a review of CAT 3 procedures and cargo smoke procedures with a high speed dive. He completed a facilitated debrief, and then a

[3] Vertical deviation indicator
[4] Single visit training

workshop. The workshop included a mini Oral where they discussed memory items and limitations, and VPT which covered aborted engine starts (hot/hung starts), air conditioning smoke; they reviewed all those procedures. They did the main deck cargo smoke event twice allowing each pilot to run the ECAM and checklist. Then the captain would do the captain right seat flows which included overhead panel setup, and option for after start or after landing flow, for right seat certification.

Non-precision approaches were performed later in the day during the LOE. The MV included V1 cuts and hand flown single engine ILS approaches to a landing.

The crew was given the flight papers and MEL item to review at lunch then the LOE contained a complete cold cockpit set-up at JFK which he observed, and an air start with the APU Inop. Pilots had a checklist, or a "toolbox" which was abbreviated checklists in the AOM, that if they followed religiously, they would not go wrong. The scenario continued with a disconnect - pushback on to taxiway S which required ATC clearance, cross bleed start ("Read checklist because you have to move some switches and bring the power up not to exceed 73 psi"), taxi-out, a runway change ("Go back to toolbox follow procedures for safety- if follow religiously you won't go wrong and crew did that correctly" "they stopped the aircraft and re-briefed the runway change and taxi"), route modification (Go direct to RNGRR then RBV Flight Plan Route), IDG failure (Crew must follow ECAM and divert to nearest suitable airport, most of the time PHL but could divert to JFK or EWR). The failure could be No Slat or No Flap which the crew each had had the opportunity to practice on Day 2. The weather for the approach was 800 foot overcast and 2-3 miles visibility, wind 110-12 knots. They flew the RNAV GPS 9R approach, then taxied in and did engine shutdown.

The PM loaded the approach. The PF got out the toolbox and would determine if they could fly the approach in profile or vertical speed. They stressed following the checklist in the toolbox religiously because they did not fly non-precision approaches often.

He used a facilitated debrief and used the threat and error management model. They stressed the Big 6 and TEM. His job was to make sure they knew how to recognize and trap the threats so it did not get through the "cheese." They had some really good discussions with the crew. The crew got interactive. They would stress TEM and went over it religiously.

The accident FO did very, very well in training, with no repeats and only a couple of 3s but he did not make any comments. The highest score was a 4 and she had mostly 4s. He said she got a 3 on non-precision approaches and on taxi in but he could not recall why. A 3 showed an error was made but trapped. He did not recall what the error was. The captain was the PF and accident FO was the PM and she was observed loading the approach in the FMC; however, he did not remember if she put the MDA in the FMC. Whoever was flying would verify everything and they were taught to have the card in front of them. He did not recall anything nonstandard.

Failures in the VPT were for the crew and not specific to the FO or captain.

Overall he recalled the accident FO's teamwork, situational awareness and CRM were very, very good as was her communication. If it was not good, she would have gotten a 3 in those areas.

During the debrief he utilized the six slices of cheese or layers of defense, although he did not have them memorized. When he did the briefing, he used the poster in the room, but the layers included automation, SA and teamwork.

The accident FO was good, very strong and was better than some they had had. Most of the females who did an excellent job and they studied real hard.

He did not witness her call for a go around in training and did not know if she would. Fatigue was not covered on day 3 of the CQ program. She did not mention any concerns about flying for UPS or the A300, nor had he heard anyone mention concerns about her.

He did not know the accident captain. He wrote no comments on his paperwork about the accident FO.

The toolbox was the necessary checklists and guidance in the trip book. It was information taken from the AOM and made into "hard cards."

The interview concluded at 0839.

**11.0 Interviewee: Matthew Frank Martorano, A300 APD/Training Supervisor, UPS**

**Date: August 28, 2013**
**Location: UPS Flight Training Center; Louisville, KY**
**Time: 0842 EDT**
**Present: David Lawrence, Katherine Wilson - NTSB; Lawrence Ashby - UPS; William Middleton –IPA; Normand Bissonnette – FAA**

Mr. Martorano declined representation.

During the interview, Mr. Martorano stated the following:

His name was Matthew Frank Martorano, and he was 58 years old. He was an A300 APD/Training Supervisor and had been for 12 years. He was hired at UPS in July 2001. He had also worked in flight standards as a standards pilot and in systems operations managing pilot issues and was once an ACP. He had been on the A300 for 11 years.

His total time was about 6000 hours. He had about 1500 hours in the A300, most of which was PIC. His total PIC time was about 4000 hours. Prior to being hired by UPS, he was in the US Air Force for 25 years. Most of his flying was in the C9, C21 and C141. He was a squadron commander, ops group commander and check airman, and had spent time in the Pentagon.

When asked about his work schedule at UPS, he stated he flew about 4 days per month. He taught four to five simulator sessions per month, and spent the rest of the time working on projects. It depended on the training load.

He normally taught day 3 of CQ but at times he would teach LOS 1 and 2 on day 2. Day 3 was the MV workshop and LOE. He had taught initial training in the past but not lately. Currently there was no initial training going on. He would also do upgrade rating rides and LOE because he was a check airman. He did not have to be an APD to teach day 3.

During LOS 1 and 2 of CQ 2013 there were two non-precision approaches flown. During the LOE there was one non-precision approach flown. He said that all of the non-precision approaches flown in CQ 2013 were profile GPS approaches. They did not do a vertical speed approach in CQ 2013.

He did not know the accident FO. He knew the accident captain. He taught the accident captain's CQ day 3 event in June 2013. The MV was successful with only 2 repeats for the crew. SPOT training was really good. The V1 cuts and single engine ILS was flown very well. The Cat 2/3 approach was done very well. The smoke scenario was also done very well. During the workshop, the crew knew the procedures. The crew was also very good at setting up the box, running the ECAM, all V1 cuts, and all maneuvering in real time. There was plenty of time to do the repeats. The LOE was one of the best he had seen this year. There were very few errors and any errors made were captured immediately.

He had reviewed the accident captain's training records for CQ 2013. There were two repeated items which was common when doing these events. One of the items had to do with the fact that the crew neglected to set the proper approach speed and did not slow down for the single engine ILS. He had the crew repeat the maneuver. The repeated approach was performed correctly. There was also a repeated V1 cut due to the fact that the FO allowed the aircraft to sink below level off altitude when he turned on the autopilot. When this happened, the accident captain who was the PM called "altitude" Before they got the "sink rate." The FO turned off the autopilot and corrected. Capt. Martorano told the FO to fly the V1 cut like the accident captain did because he had done it "so good."

He explained that he graded both crewmembers a 1 because they failed to slow down during a single engine ILS. The grade of 1 for the accident captain was due to situational awareness. They also received a 1 for workload management because the FO was hand flying and missed calling for the final approach speed to be set, and the captain did not catch it. For the V1 cut, the accident captain did not receive a 1 because he said "altitude" and caught the FO's mistake. After the event, a facilitated debrief was performed using the threat and error model. He would ask the crew to tell him what happened during the debrief before he would tell them what he observed.

During the LOE the crew performed a non-precision approach to JFK with a flap problem. The anomaly to return was a divert message from flight control.

The PM built the approach in the FMC and set up the different items related to the approach. When asked about how the accident captain did during the non-precision approach, he stated that the accident captain checked the work and used the briefing guide to brief the approach. He had never heard the briefing guide referred to as a "toolbox." He said the Captain verbalized his actions while using the briefing guide. He stated that the Captain's SOPs and communication

was excellent with the exception of the one item he already mentioned. He also said that he did well.

After LOE they talked about the threats. There were very few errors. The accident captain did well on communication, leadership and time management. Only once during the training event did the accident captain not make the correct call outs. The accident captain called out on speed at 500 feet but did not notice that the actual speed was 12 knots high. They discussed PM duties and callouts in the debrief. He did not see that happen often.

The most common error he saw during a non-precision approach was not extending the centerline. The airplane would not start down when they hit the final approach fix. This was different than activating the approach. He had not seen anyone in the last two years that did not activate final approach mode. He had seen errors in that pilots did not clean up the legs page.

He had not seen anyone enter anything other than the minimums into the FMC approach page unless someone had read the altitude incorrectly. This was usually corrected when the PF checked it. They did not teach that procedure. The preferred method of a non-precision approach was a profile approach. There was not a combination of the vertical speed and a profile approach. But if the ILS glideslope was out, at 0.2 before the final approach fix they would set vertical speed and then hit profile.

If profile did not capture and the flight flew past the final approach fix, the crew was already behind and should perform a discontinued approach. The crew should have noticed before the final approach fix that the "P descent" was not flashing. He was not sure when "P descent" would begin to flash. He did not know if there was specific guidance to perform a discontinued approach but the crew did not follow the procedures and the airplane did not start to descend. He had seen crews mess up and come back around. He had not seen crews try to catch up after messing up an approach. He said again that the only time you would use vertical speed during a profile approach was to catch up if profile did not capture. If the crew did not extend the centerline and then the profile did not start the descent down, he had seen crews come around and do the approach again.

When asked about pit falls with non-precision approaches he stated that computing minimums was a "gotcha." He said another "gotcha" had to do with not computing the correct approach speed when flaps or slats were not available.

When shown the approach plate for the LOC 18 he stated that it was not approved at night. During the day he would fly a profile approach. He would have the PM load the approach and set up the box. He would then transfer control of the aircraft, and then brief the approach using the briefing guide. He would talk about the step down requirements, as well as the DME to use for the step down. When asked about DME he explained there were 5 that one could look at. He said that the PFD DME would be the one to use for this approach. He had seen pilots look at the wrong DME during initial training and was something that they highlighted and emphasized during initial training. He said the AOM or PTG would contain this information.

He had not flown into BHM with UPS and probably had not when flying the C141.

If "P descent" was not flashing both pilots should notice. The last time he thought they taught a vertical speed approach was in 2007 at KROA with an LDA approach to runway 06.

He explained the threat and error model and the 6 pieces of cheese. During the facilitated debrief they would try to get the students to talk and it was an excellent tool to do that. They would discuss what were the threats, the errors made and if there was an error was it captured. They would discuss if anything made it through the cheese, what they did well and what they did poorly. If they did something poorly, they would discuss what they need to improve and how they can do it better. He thought the 6 pieces of cheese included workload, SA, communication/briefing, and teamwork/leadership. Fatigue was listed and would be encompassing in all the potential threats. If a pilot was fatigued he should not be flying. He thought that if one of the crew members was tired that they should brief that before flying. He had talked to crewmembers about that. As a part of a fatigue call, they would talk to the pilot to find out why he was fatigued. Usually the crewmember would explain that the hotel rest environment might be the cause. There was no push back on a fatigue call and the fatigue call would go to the fatigue management group. In real time, a fatigue call would never be questioned.

The accident captain was very experienced and did not have any issues with the A300. He had never heard anything about either crewmember as far as their flying skills prior to the accident. Since the accident, he had heard that the accident FO's flying skills were excellent.

When asked about types of flights and approaches he flew he said he flew half at night and half during the day. He recently flew a LOC approach into Bradley. He flew lots in the simulator.

In LOE this year, they flew all GPS approaches. Last year, they flew the localizer.

When asked about adding a restriction to the briefing guide that would prevent pilots from trying to salvage an approach if they missed the path he said that would be a good improvement.

The interview concluded at 1029.

### 12.0 Interviewee: Salvatore Pisano, Flight Training Supervisor, UPS

**Date: August 28, 2013**
**Location: UPS Flight Training Center; Louisville, KY**
**Time: 1107 EDT**
**Present: David Lawrence, Katherine Wilson - NTSB; Lawrence Ashby - UPS; William Middleton –IPA; Normand Bissonnette – FAA**

Capt. Pisano declined representation.

During the interview, Capt. Pisano stated the following:

His full name was Salvatore Pisano and he was 62 years old. At the time of the accident, he was employed by UPS as a Flight Training Supervisor. He had been a supervisor for 22 years, and he was hired at UPS in 1991. He began his career as a 747 ground school instructor, then qualified as an engineer on the "74", and became a flight engineer sim check airman on the "74". In 2000 he became a FO, and ground school instructor on the A-300, and about 7 years ago he became captain on the A300 and shortly thereafter was a simulator check airman, evaluator/instructor AQP. He was not an APD.

His total flight hours were 5,000 of which about half were as PIC. He had 1600 hours in the A300, with 800 of those hours as PIC.

Prior to working for UPS, he was a 747 ground school/sim instructor at TWA, flew Lear 25/35 and Falcon 20 with several companies Part 91/135, and twin Cessna's and various single engine aircraft.

His roles and responsibilities at UPS as a check airman on the A300 were primarily recurrent or CQ instructing/evaluating. Additionally, he was involved with the MEL attending monthly meetings going over change requests from various departments.

He had not instructed Initial Qualification in years.

He knew the accident crew within the training realm but not personally.

He had at least one simulator event with the accident captain, and was sure that he had at least one event with the accident FO but could not remember when, perhaps her release to the line check.

He had not heard anything specific from others about the accident crew but his impression was that they were very good pilots.

He gave the accident captain day 2 CQ, LOS 1, workshop 1 and then LOS 2 in June, 2013. A support FO, Phil Millett, was provided for LOS 1 and 2 and FAA Inspector Bob Clark observed LOS 1. He thought the FAA inspector being there was just a random observation to make sure they were doing what they said they were doing. He did not recall if Inspector Clark provided any feedback.

He felt that the captain did an excellent job overall, with one "glitch" in LOS 1 that stood out. "…he had just completed a diversion…loss of Autothrottles…deal with that…do a Cat 1 landing in PHL…that was done very well…then we zap em to downwind…we give them weather which includes gusty winds and windshear advisories…and the approach we use is the RNAV/GPS 9R…we freeze the sim and allow them to configure and complete all their briefings." The accident captain's DA bug was set a couple hundred feet above the FO's, and in spite of the briefings and crosschecks nobody caught that. The crew got a go-around due to windshear and set up for another approach. They still did not catch the discrepancy in the DA bugs and they commenced the approach. He thought he mentioned to the FAA Inspector that the bugs were wrong and let's see what happens. As the captain called 'approaching minimums' a hundred feet

above his bug, it was a couple hundred feet above the FO's. They broke out and the FO called "runway in sight, landing." It could have been quite interesting to see how they would have responded to the captain's minimums call if the FO had said anything at all up to that point. If he would have gone around, would they have negotiated the proper DA. "As luck would have it, it didn't happen." After Capt. Pisano took the simulator, he asked the crew to look at each other's altimeter bugs. The FO remarked to the captain 'I wondered why you called approaching minimums when you did.' He thought it was unfortunate that they did not see what the outcome of that was. He thought he marked down situational awareness and workflow on the rating sheet. He thought that the cause of the error was the crew started to brief one thing then they briefed the windshear and then they came back to where they left off in the approach briefing and somewhere in there they did not crosscheck the bugs.

He was shown a copy of his training record for this event and corrected the written remark about the captain setting his bug "below" the DA; the bugs were set above minimums.

He did not think the crew went through the entire briefing guide after the interruption. He was not sure if it was required to re-brief "from the top" after an interruption, but it "is something you should do". In this case the crew was already set up because it was not the first event they were running in the simulator.

It was a "hard road to hoe" to know how much to say what you must do or should do. He would expect them out of caution to go through the briefing card as a cleanup.

He had seen this type of mistake at least one other time where a crew did not set the bugs the same. He had also seen other crews not do a full brief

Checking the bugs was an SOP. He thought that the pilot group used the briefing guide as a "do list" to set up the approach.

He thought that the pilot group is not comfortable with non-precision approaches because they flew them rarely. For that reason pilots would not want to set up the approach from memory and would rather pull the card to set it up.

They did not teach the use of the briefing card but it was highly recommended, and that they do not mandate using the briefing card. The manner of its use was up to the crew.

He did not recall anyone intentionally entering a value into the FMC other than the MDA or DA/DDA.

He felt a mistake made by crews when flying a non-precision approach was confusion about the role of the GPS. Crews thought that the GPS was required to fly a profile approach and if it was not available because it was MEL, then they could not shoot the profile approach. This was discussed in the workshop. He could not say it was a common mistake. If the crew was using the briefing guide, it would take them right through it.

He described the procedure for intercepting the glide slope/path from above when flying an ILS glide slope out approach. This was the only time when crews were taught to utilize this procedure. Pilots probably saw this scenario last year but he did not remember.

A crew should go around when the aircraft did not capture or lost the profile descent path, "…it's in the list…" The expectation was to go around as this was not the time to negotiate. It would be a strain on situational awareness to understand the problem, and it was better done at altitude.

He thought that the accident captain's CRM, SOPs, and interactions "couldn't be better". He did not receive any feedback from the seat support FO about the accident captain. His impression was that the seat support FO was pleased with how the training went.

He reiterated that the seat support FO and the accident captain both erred in the LOS approach DA bug discrepancy, and that it was not a "setup".

He did not recall if the Captain commented anything directly about the DA bug discrepancy during the LOS debrief. The FO lost SA and knew it; the accident captain lost SA but he did not know it. He did not remember the accident captain stating why he missed the bugs. The accident captain said the training was very good and he seemed to enjoy it. For some people, training was nerve racking, but Capt. Pisano did not get that impression from the accident captain.

He was not involved in any discussions of SOP or training changes forthcoming as a result of the accident; he was not sure if those discussions were happening.

He stated that the seat support FO's performance was not recorded/tracked unless below a certain level, subjective to the instructor/evaluator. If the seat support pilot had a particular issue that the instructor thought was indicative of a deeper problem, they would give that pilot additional training. It would be up to the simulator check airman to determine the threshold of when training was needed; if the seat support was marginal, that was not a good enough reason.

He was allotted 4 days a month to fly the line and usually flew 2-3 days, mostly in the day to BDL. His last non-precision approach was an RNAV in VMC at DSM at about 0500.

He had never been to BHM while at UPS.

He did not feel that adding another reason to go around in the briefing guide, such as loss of profile path after crossing the final approach fix, would be a burden; he thought it would be worthwhile. He knew pilots had had problems with the profile approach and not setting it up properly and having to do it again.

He had not seen any seat support pilots being pulled from an event or retrained, but they communicated to those pilots that they should be on their game when they came to the simulator and treat it like their own training event.

He thought that the accident captain utilized the autopilot "normally", and that his hand flown single engine ILS was a "4", a very nice job.

He stated that some of the "problems" with flying non-precision approaches was that sometimes it did not capture and the crew did not know why. They would be in VMC so they would just follow the VASI/PAPI down. They did not have enough information to know if it was a system problem or a set up problem. They usually shot a non-precision approach in visual conditions and they tried to encourage pilots to do that.

Pilots received a presentation in CQ Workshop 1 indicating that when the opportunity arises they should try to fly a non-precision approach. Instead of setting up the ILS as a backup, put in a non-precision approach. He did not think it specifically said to back it up with a non-precision approach but they encouraged pilots to practice them.

The FOM said you should backup any visual approach, but it was not specific to the type of backup approach or that a non-precision approach should be practiced.

He had no questions for the interviewees.

The interview concluded at 1156.

### 13.0 Interviewee: James Phillips, A300 Assistant Chief Pilot, UPS

**Date: August 28, 2013**
**Location: UPS Flight Training Center; Louisville, KY**
**Time: 1537 EDT**
**Present: David Lawrence, Katherine Wilson - NTSB; Lawrence Ashby - UPS; William Middleton –IPA; Normand Bissonnette – FAA**

Capt. Phillips declined representation.

During the interview, Capt. Phillips stated the following:

His name was James Bill Phillips II, and he was 63 years old. His title was UPS ACP on the A300. He had been an ACP for 6 years. Prior to that, he spent 18 years on the B727. His date of hire with UPS was January 1, 1989.

He had also been a check airman on the A300 since 2007. From 1989 to 2007, he was on the B727, at various times on all three seats of the airplane. Prior to UPS, his flying consisted of all civilian flying. He had been flying for 46 years, having a background in charter and commuter flying prior to UPS. He held a bachelor's degree in aviation.

He estimated his total time at about 8,000 hours, and about 80% of that time was as PIC. He estimated that he had about 750 hours on the A300, all PIC time. He flew the line once a month for several days.

He described his role and responsibility as ACP as mostly administrative in nature. The culture at UPS was to have the pilots develop a personal relationship with their chief pilots. It gave pilots

the name of someone to contact for personal reasons. His responsibilities also included discipline, monitoring attendance, monitoring sick leave and personal leaves of absence. As a check airman, he conducted line checks on the A300. He said they tracked due dates for the captains, and AQP line checks were due every 2 years. He said they do more than 70% of those required each month. The total number of line checks he conducted on a monthly basis varied, but averaged four per month.

He did not know the accident FO, but did know the accident captain. He remembered conducting a line check on the captain back in March 2013. Other than that, he just knew him professionally. He met the captain back when he flew with him on the B727; the accident captain was a FO. He did not recall if he had ever flown with him on the A300. The line check in March 2013 was the first time he conducted a line check on the captain. He said the line check was "very normal." He believed the trip was to Chicago, with an intermediate stop in Columbus. He said the crew switched off, and he observed the accident captain act as both pilot flying and pilot monitoring. The captain flew to Columbus, and the FO flew to Chicago. There were no anomalies during either flight, and both legs resulted in landings using an ILS, not a non-precision approach.

He said no other pilots ever expressed concerns about flying with the accident captain, either before the accident or after the accident.

He knew of no disciplinary actions, letters of correction or employment actions taken against the accident captain. There was an "exception report" on the captain related to a sick call about a year or two ago, but it was reviewed with no action.

He was shown a copy of the captain's absence file, and asked about the captain's sick call on August 9, 2013. He said he reviewed the sick call, and closed out the report with no action. The captain did not speak with him concerning the sick call, nor did he receive any report from crew scheduling indicating the captain explained the sick call. Typically, pilots called in sick by calling the crew schedulers, not the chief pilot. A pilot did not have to give an explanation about being sick.

Regarding the comments in the absence report that said "ACP review required", he said that they tried to monitor sick calls to look for crews with a high number of sick calls to determine if anything was wrong with the pilot. He said there was no set number of sick calls that would trigger the review, and it depended on the type of flying being flown, whether they were long leg international flights or for short hop domestic flights. He said there was no jeopardy involved in a pilot calling off sick for a trip. Regarding the notes in the exception history report, he said he knew the pilots and flew with them so he knew what was going on. It was not a judgmental thing, just a personal note. It was just for the ACP's use.

He said the accident captain did not have an attendance problem.

Pilot records were maintained on the flight administrative website at UPS, and access to the website was limited. He did not have access to the pilot's training records, only the due dates to track currency.

Pilots could contact him anytime either at the office or via email. He had a UPS-issued blackberry so if he got an email, he could respond to it immediately. He had never had anyone contact him with concerns about nonprecision approaches or about BHM.

He said he had flown into BHM on the B727 years ago, but not on the A300. He had never flown the LOC18 approach into BHM with the airline. The last time he personally flew a non-precision approach on the A300 was in simulator training back in November 2012.

When asked if he thought pilots at UPS were properly trained to conduct non-precision approaches on the A300, he said "yes." Non-precision approaches were trained in the simulator, though the pilots did not conduct them on the line often. When he went through training it was reviewed and taught very well. He could not answer how often pilots flew non-precision approaches but said "I think everyone is truly aware of them by keeping track of the AOM;" pilots would need to know how to do them which they did. He said the preferred method to conduct non-precision approaches was by using the profile descent, which gave the pilot a continuous descent.
He had not heard any pilots express concerns about flying into BHM.

He had been the accident captain's ACP since about 2012.

If a pilot contacted him about being fatigued, they would be taken off the trip. He did not get involved in fatigue calls, and there was a working group that would handle those issues.

The accident captain never came to him with concerns about his schedule or fatigue. He had no concerns about the captain on the line checks he conducted; he was just a very nice man.

He confirmed that he was a check airman on the B727 the entire time in all three seats.

He could not remember the last time he flew a non-precision approach in actual conditions. When he would fly the line one time each month, he would pick the route and trip to fly by "buying" the trip from another pilot. The last time he flew he bought a trip from a pilot who had an issue and needed the time off. That particular trip was a night trip. About 75% of the time on his trips he flew at night, and the rest during the day.

He said there were challenges going through training from round dials to flat screens like the A300; training is always a challenge to transition to a new airplane, but "it's still just an airplane" and was not something that could not be worked out. He said the UPS training for the A300 was good.

He currently had about 89 pilots he was responsible for as ACP. He did not think it was an unmanageable number. He said "we have a great pilot group." The 5% got more attention than the other 95%. Most pilots came and went with no supervision. He did not have contact with each pilot on a daily basis but spoke with 2 pilots the previous night by email. His contact with the pilots was usually by email.

Interview concluded at 1605.

**14.0 Interviewee: Todd August Goebel, A300 FO, UPS**

**Date: August 29, 2013**
**Location: UPS Flight Training Center; Louisville, KY**
**Time: 1014 EDT**
**Present: David Lawrence, Katherine Wilson - NTSB; Lawrence Ashby - UPS; William Middleton –IPA; Normand Bissonnette – FAA**

FO Goebel was represented by Kathy Yodice, Yodice and Associates

During the interview, FO Goebel stated the following:

His name was Todd August Goebel, and he was 49 years old. He was an A300 First Officer. He was hired on March 15, 2001 at UPS as a B727 Flight Engineer, and then upgraded to first officer on the A300 about 3.5 years later.

His total time was 11,000 hours, with 3000 hours PIC time. His total A300 time was 4000-4500 hours.

He knew the accident captain, but he did not know the accident FO well. He briefly met the accident FO during his last CQ event and they had lunch together for about 30 minutes. They discussed general things such as where they lived and schedules, but nothing in particular. He said she flew mostly vacation training schedules (VTO). These are schedules built up from vacations and training that may have been dropped. They did not talk about the quality of schedules. She did not mention any concerns about her schedule, or being fatigued or tired when flying.

He had flown a couple of bid periods with the accident captain. He said the accident captain flew all of the trips contained in the 56 day pay period. The accident captain had not called in sick during that bid period. In the previous schedule he had used some personal days to watch his daughter play basketball.

He said that flying with the accident captain was very standard; he did things "by the book." His demeanor was professional and he was an approachable type of person. No problems arose during their trip pairings but if they had he would not have had a problem discussing them with the accident captain. In terms of flying, the accident captain did things the way they were supposed to be done; he ran procedures, called for checklists, and made callouts. He had no concerns about flying with the accident captain.

During a flight out of Rockford, FO Goebel noted that the fuel was off a bit. The outer tank fuel distribution was not correct. He pointed it out to the accident captain that the fuel was wrong and the captain told him immediately to call and have the problem fixed. The accident captain did not let things slide. He stated again "Everything he did was standard. He was always doing things the way it was supposed to be done."

The trips they flew were primarily between Dulles and Newark. These flights flew through the sort in Louisville. Toward the end of the pairing, they flew to Rockford. None of the flights went through BHM.

He had flown into BHM but he could not recall when; it had not been recently. He had not landed on runway 18. He was surprised when he heard that the accident crew was attempting to land on runway 18. In all the times FO Goebel had been into BHM he had landed on the longer runway. He had heard that the longer runway was closed but all the times he flew in to BHM, it was open.

If the ILS was available, they would fly that. FO Goebel had also flown passenger operations. He said 99% of the time they shot the ILS. He could not recall if he and the accident captain flew any non-precision approaches. During the time they flew together he thought that they might have set up for one non-precision approach to practice but in the end they did not fly one because of ATC constraints.

It was standard for the PM to load the FMS. Either the DA or MDA would be entered for the non-precision approach on the approach page. He did not recall loading a non-precision approach during all the flying they performed. They primarily did the ILS going to Newark. It was a busy airport so ATC would not allow them to perform something else. They also flew the ILS into Dulles. They might have set up a non-precision approach but he did not recall if they flew it.

He had not heard of anyone putting any other altitude in the FMS other than the DA. It was rare to fly a non-precision approach and pilots did it the standard way they were supposed to do it. He did not use the briefing card for the types of approaches that they shot while flying with the accident captain. The briefing card would only be used for a non-precision approach.

He had not heard any concerns about flying with the accident captain. In fact, FO Goebel was thinking about bidding again with the captain. He did say that they had the same relative seniority.

He said the schedule they flew was not that bad. It was a pretty good schedule and they only flew 2 legs per night. Pilots always talked about schedules. Some were better than others and there were some tough schedules out there. The particular bid they flew together was a pretty decent schedule.

He and the accident captain had slept at the Rockford hotel and that hotel had “sleep number” beds. The accident captain stated many times that he did not sleep well on sleep number beds. When they got to the hotel, they had a non-sleep number bed for the accident captain. However, that particular room was near a maintenance or housekeeping area and the accident captain told him he did not sleep well because he heard the doors opening and closing.

He and the accident captain had flown last year as well and the bid was very similar to the one they flew this year. The accident captain took a personal leave of absence during a Burbank-

O'Hare trip. They also flew to Guadalajara on one trip. The rest of the trip was Newark and Dulles.

The accident captain was in incredible shape. While on Dulles layovers they did not do things together because the accident captain liked to take one to two hour walks. Sometimes they would cross paths at a pizza restaurant that they both liked.

The accident captain did seem rested for their flights. The Dulles layover hotel was nice and the layover was 15 hours. It was a good hotel to get rest. It was an ideal layover with time to rest, exercise, eat, and get ready for work. It did not lend itself to fatigue or being tired. Both he and the accident captain had commented that it was a nice hotel in Dulles and they had no disruptions.

He had not heard anything good or bad about the accident FO as she was relatively new to the company.

Prior to UPS he flight instructed and flew charter out of MKE. He also flew for the Midwest commuter Skyway and then America West for 3 years.

He had called in fatigued once. It was a long time ago. It was towards the end of a week of flying a challenging pairing. The fatigue occurred on a Louisville, Springfield, Wichita flight. They could not get into Springfield and diverted to Wichita. Scheduling wanted them to go back to Springfield and then to Wichita. He and the captain he was paired with both called in fatigued. There were no follow up calls after the fatigue call. As he understood it now, there was a review to determine if fatigue calls were legitimate. He would call in fatigued again if he had to.

Fatigue should be briefed prior to a flight. He stated that the type of flying they do is tough and lends itself to fatigue. He had not flown when not fit or unsafe but at the end of a week he got tired. The UPS fatigue policy was to call, some questions would be asked, a pilot would get his rest and the case was sent to a review board.

If there was a day where he or the other pilot he was flying with was tired but still safe to fly, it would be mentioned or it would come up. The type of flying they did was challenging and night flying was not easy on your body. Sometimes he would feel fine when he would start the evening but at the hotel he would realize how tired he was.

He left America West due to stability. He did not want to end up at a company where he would not have a good retirement. He wanted to be at a company where he would stay for the rest of his career.

He was not sure if the accident captain filed a report about the Rockford hotel. He did not mention it to FO Goebel.

When he flew with the accident captain they never had a time when they had to go around. There was a time when they had to deviate around weather. Everything went surprisingly smoothly and that was one of the reasons he wanted to fly with the accident captain again. There were no ATC

issues with keeping them high or them getting behind the airplane. Flying into Peoria, ATC will hold the flight high and then dump them on the GPS approach, but he did not recall if that occurred during their pairing. He thought they landed on 13/31 a majority of the time, and both ends had the ILS. They did land on the crossing runway once but he did not recall the approach. There were no issues that stood out to him when going in there.

He stated that occasionally you see people practice non-precision approaches when training was coming up. With the briefing card, it was much easier to set up; there was no guess work. There were other factors to consider like if ATC kept you up high and then you get busy with that. As long as a pilot used the briefing card it was very straight forward.

He thought the briefing card helped you cover all the bases.

When shown a copy of the BHM LOC18 approach plate, he said the day versus night remark on the approach plate could be confusing. Flying in from the north, you would be coming straight in and could cause you to get rushed and could be confusing. The chart says night is NA but the note says no night approaches if the VGSI was not operative. Runway 18 was not one you would expect at BHM. All those factors could lead to confusion and things could get busy in a hurry.

He could not think of any negatives about the accident captain. The fact that he was willing to fly again with the accident captain should indicate how he felt. He enjoyed flying with him and being with him. He was a nice guy, set a positive tone in the cockpit, did things professionally and had no deficiencies in his flying skills.

The interview concluded at 1053.

### 15.0 Interviewee: Thomas Orlando Ruggiero, A300 First Officer, UPS

**Date: August 29, 2013**
**Location: UPS Flight Training Center; Louisville, KY**
**Time: 1110 EDT**
**Present: David Lawrence, Katherine Wilson - NTSB; Lawrence Ashby - UPS; William Middleton –IPA; Normand Bissonnette – FAA**

FO Ruggiero was represented by Kathy Yodice, Yodice and Associates.

During the interview, FO Ruggiero stated the following:

His name was Thomas Orlando Ruggierro, and he was 50 years old and his date of hire at UPS was October 6, 1997. He was an A300 FO and previously was a B727 FO for 2 ½-3 years and a DC-8 flight engineer for 3 years. Prior to UPS he was an Air Force pilot flying the F-111 and T37 as an instructor. His total flight time was approximately 6000 hours, PIC time was 2500 hours, and he had 1500 hours on the A300.

He did not know the accident FO and did not recognize her picture. He knew the accident captain, stating that he was paired with him during continuing qualification in 2010. He had

since flown with him in 2013, about 2 ½ months ago, on a 1 week trip. The trip included a 0300 departure from SDF-BDL-EWR layover then deadhead SDF to fly to CLT and layover. The next night included CLT-SDF-BDL-EWR and a layover. The pairing continued EWR-SDF-CLT and a layover then CLT-SDF-DEN-SLC for a 13 hour layover. The trip ended with SLC-DEN-SDF. The trip was fairly difficult and fairly typical with the Saturday and Sunday morning being the toughest parts. They were tough because the crew was up all night then flew two legs after a short 13 hour layover.

He felt that the accident captain was average to above average. He managed the cockpit better than most, in his briefings he took input from the first officer, had a good management style and ran checklists well. FO Ruggiero said he felt comfortable with him.

He said the accident captain was proud of his family and flew helicopters in the Marines.

The accident captain did not express concerns about flying or his schedules. They spoke about trips in general and both were trying to trade the next trip in their schedule as they felt the Saturday and Sunday morning flights were difficult due to the 2 legs, long flight time and time on the ground. FO Ruggiero was able to trade his next trip but the accident captain was not. The captain would use the sleep rooms occasionally while the first officer would use the recliners. He could not recall if they flew any non-precision approaches.

He felt the accident captain had good CRM skills and used the phrase "What do you think about…." to be inclusive of the first officer but when made, his decision was final.

He recalled a few mechanical issues during flights in the last few months but could not recall any anomalies, MEL's, or Emergencies during their flights.

He had no concerns with the accident captain and was not aware if he was on any secret list or if others had concerns about flying with him. He had never heard anything about the accident FO.

Profile was the preferred method of flying a non-precision approach as it provided glide slope information. The PM usually set up the box and it was a little more intensive on GPS non-precision approaches. They did not do them regularly so they had a checklist that they followed to make sure they were putting in the approach and MDA. The box gave them the descent angle.

He had flown into BHM on the DC-8 and possible on the A300 and was not aware of any challenges.

He thought the accident captain was very detail oriented, "not obsessive" but wanted it done right. FO Ruggiero liked to do things right too. The accident captain ran the cockpit well. He would bid with him again.

He noted no issues with the accident captain during his CQ event.

When asked about briefing fatigue he said, "Being tired was common and everyone knows the dangers of it so it was common to discuss it and look after each other." He felt the after the sort

legs were challenging, BDL and EWR were shorter, DEN and SLC were longer and if unable to sleep in sort can be fatiguing. He had called fatigued twice, once 3 years ago and once 5 years ago. He felt reserve assignments are more fatiguing. He recalled a reserve assignment that he called fatigue on started with a Sunday deadhead to ABQ, then Monday night flights ABQ-PHX-ONT-PHX-ABQ then flopped back to B side. He had called fatigued before. Under old contract he thought his pay would be docked 2 hours then it would be sent to a board for review. Under the new contract the fatigue call was sent to the fatigue board then then if justified there was no retaliation. He did not believe there would be a letter placed in his file and he felt comfortable calling fatigued. He thought others may be skeptical about the fatigue policy and that there would not be repercussions. There were pay issues and pilots wanted to complete the mission. He had never called sick when he was fatigued but had heard others had done so.

He did not perform a go-around during his trip with the accident captain, but had performed a go-around at UPS. The go-around occurred at SLC during a windshear event that did not generate a warning. He said "Boss lets go-around." He had no problem telling a captain to go-around.

He had known some pilots to doze off in the airplane.

He felt the non-precision approach briefing guide was a good guide and that a note that required a go-around if the vertical failed to capture past the FAF would be helpful. He had flown a couple non-precision approaches in the last year and he was comfortable with them although it took a while to be, although he believed most pilots were not and just practiced them prior to a training event. He did not think pilots practiced non-precision approaches if they were not going to training. He would back up a visual approach with the non-precision approach if that was the only approach available.

He would put the MDA or DA on the approach page. He thought doing so gave him the glidepath. It was a part of the approach briefing guide and it was pretty self-explanatory. He had not seen or heard of any pilots putting anything other than the charted DA or D-DA in the FMC.

The interview concluded at 1143.

### 16.0 Interviewee: Tom Sabo, Captain, FedEx

**Date: August 29, 2013**
**Location: UPS Training Center; Louisville, KY, via phone**
**Time: 1400 EDT**
**Present: David Lawrence, Katherine Wilson - NTSB; Lawrence Ashby - UPS; William Middleton –IPA; Normand Bissonnette – FAA**

Capt. Sabo was represented by Mr. Eric Iverson, ALPA.

During the interview, Capt. Sabo stated the following:

His name was Thomas M. Sabo, and he was 60 years old. He was a captain on the Boeing B757 for FedEx. He had been with FedEx for 23.5 years.

He was the captain on FedEx flight 1488 on the day of the accident. He was checking the NOTAMS. He was familiar with BHM airport. He knew 6/24 was going to be closed at BHM. They were doing minor maintenance at the airport, and he was expecting to open the runway early. He tuned up ATIS early and was expecting to hear that the runway had opened early as it often did. He was the pilot flying, and his FO was the pilot monitoring. The PF was the FO who was also monitoring Atlanta Center. He made an in range call to the ramp; 6/24 was still closed. He was 60-70 miles out from BHM and called the tower to find out the status of the airport. He said up to this time the flight was "unremarkable."

UPS was on the approach and he heard them get cleared to descend. He did not remember what altitude they were cleared down to. He called the tower and asked the status of 6/24, and the tower called airport 6 and asked them. Airport 6 said they were almost done and would be opening shortly. He told the FO to slow from 320 knots to 250 knots. He was doing the landing data, and was still listening to the tower frequency at BHM on the other radio. A few minutes later, he could not remember if UPS asked for 6/24, but tower said he could offer UPS runway 18, and UPS accepted. Tower cleared them down lower, cleared them the localizer 18, and then cleared them to land 18. He thought UPS was given an initial clearance to 5000 feet then 3000 feet then was cleared for the LOC18 and cleared to land.

He and his FO were talking about the approach when he heard airport 6 ask the tower "did you see that" and tower asked what was that, and airport 6 said "UPS." He told the FO to slow way back, I think UPS just crashed. He did not know if they would have to divert which he was not concerned about because they had plenty of fuel. He was busy and had his own problems to deal with. He looked at the alternates. Tower began coordinating first responders, and they were switched to the BHM approach frequency. He could hear both sides of the conversation because tower operated both the approach and tower frequencies. They checked in and told the controller they were aware of the situation. They were cleared down to 11,000, then 5,000. Tower told airport 6 to clear the runway so they could land on 6. They prepared to land on runway 6. They vectored for CEMPO, which was the initial approach fix for the ILS 6. They were cleared for the approach and cleared to land.

He said BHM ATIS weather was something like 800 foot ceiling and 8 miles visibility. However, when they shot the ILS, they broke at 300 feet. They did not receive any new weather from the tower while being vectored for the runway ILS 6. They were in a different location than runway 18 so he could not speak for what the weather was north of the field. Once they did land, the visibility was real good. The ceiling was ragged, not solid. Vertical visibility was fair, and flight visibility was not so great. They were solid in the clouds all the way down to 300 feet but it was a ragged base and could see lights on the ground. The weather they received was off the ATIS. When asked if he had ever seen that type of visibility discrepancy, he said sometimes its 800 feet at the runway but different on other parts of the airport. BHM, by the way it sits in the basin, could have variances in the weather. He had not seen it to be greater discrepancies there than anywhere else. It was a solid overcast at 300. Tower never asked for a ceiling report and they landed, and they did not give one, probably because the tower controller was busy

handling the accident. They went into the clouds around 2000 feet or a little higher. He said forward visibility was not that great but they could look vertically down and see lights.

They came in from the north, 10 miles NNW of VUZ. He did not notice any significant weather to the north. It was hazy, with no significant weather. It was a low ceiling layer. ATC handling was all normal. They had a feeder that came out of BHM at the same time, so sometimes ATC would delay their descent as the feeder was departing, but there was nothing unusual that night. It was no extraordinary effort to get down.

He had landed in BHM on 18, but it had been over a year and a half. It was not the same type of approach they flew into it currently. They did not have an RNAV back then, and there were not quite the restrictions there were now.

On the night of the accident, it was only a 3-4 minute delay to wait for 6/24 to open. He preferred to land on runway 6. He had shot the approach to 18 previously. Runway 18 was a CFIT moderate runway at FedEx. He said he personally did not want to shoot that approach to 18 since it was a dive-and-drive. The 18 approach is a valid approach, but there were a lot more reasons to land on 6 instead of 18 with the terrain on 18. It was in a basin with a hill at the end of the runway. It was a personal preference.

Once they broke out of the clouds, visibility was as called and at least 8 miles below the ceiling. When he shot the approach to 18, he could not remember whether or not it was a night. He did not remember seeing mist or precipitation after landing.

The interview concluded at 1423.

### 17.0 Interviewee: Glenn Derting, A300 Captain, UPS

**Date: August 29, 2013**
**Location: UPS Flight Training Center; Louisville, KY**
**Time: 1535 EDT**
**Present: David Lawrence, Katherine Wilson - NTSB; Lawrence Ashby - UPS; William Middleton –IPA; Normand Bissonnette – FAA**

Capt. Derting was represented by Kathy Yodice, Yodice and Associates.

During the interview, Capt. Derting stated the following:

His name was Glenn Stuart Derting, and he was 53 years old. His title was UPS Captain on the A300, and he had been a captain on the A300 for 6 years. His date of hire at UPS was April 1994. He had previously flown the 747 and B727 at UPS. He was a line captain right now but had previously been an instructor on the 747 as an FE simulator instructor, no line checking. His background was Air Force WC135's, and he worked his way up to standardization and evaluation, then went to Piedmont, which was subsequently bought by USAir and he was furloughed. He then was in the Air Force reserves and retired after 21 years.

His total time was about 12,000 hours, and his PIC time was over half of that. He had about 1,300 hours in the A300.

He flew a week long pairing with the accident FO. He just briefly would say hello to the captain when passing in the hallway, but did not know him.

His pairing with the accident FO was a week-long trip with an ICT long layover, followed by a TYS layover, and flew to the end of Friday. She was a "pleasant competent professional pilot." He characterized her flying skills as "competent." Regarding her compliance with SOPs, he said she was very good. They got along well together, and worked well together. He did not have to correct her on anything. She did her job well and was a pleasant pilot to work with. The only conversation that came out in his mind, one day when they went out to dinner, she said it always took her an hour or hour and a half to wind down and get to sleep. Her appearance was not fatigued. There were a couple of times during the cruise legs towards the end of the week where he felt she was "zoning out." She was not asleep and was responding to radio calls. This was something he did not notice at the beginning of the week.

He characterized the trip as relatively easy. In the scheme of their schedules, it was on the easier end of the spectrum. They did have a few weather issues going into Springfield, and did have to hold at one time to get into the airport due to weather. He said she did an excellent job, a compliment and assistant as opposed to less than that. Everything he asked for and expected in an FO, she did.

They flew ILS's and visual approaches backed up by the ILS the whole trip. They did not shoot a visual approach backed by a non-precision approach. It was beneficial to fly them in VMC on occasion. He would do that on occasion because their non-precision approach procedures were "a little complicated," and time-consuming. They had an abbreviated checklist that seemed to help, but there seemed to be a lot of steps to set up the approach and properly brief the approach. He said it was cumbersome, and did not lend itself to last minute runway changes. There were some critical steps that, if omitted, it would not perform properly, but he had not seen that. He said "any procedure that requires a briefing card just seems a little over-complicated on something that should be relatively straight forward and easy." The A300 was the only airplane he flew that had a VNAV function . His previous experience was flying dive and drive. This airplane had two types on non-precision approach procedures, vertical speed which was a dive and drive to the MDA and profile with a constant glideslope.

He said there were multiple steps to get the airplane set up for a non-precision approach. He never omitted those steps but assumed they were necessary because they were on the briefing guide. It worked a lot better if you were down at the vectoring altitude with time. There were times when you felt rushed by the cumbersome nature of setting up one of these approaches. If you had time to set it up, there was not a problem, but when there are other influences like weather or ATC, you could feel rushed.

He said he had flown into BHM before on the A300, about 3 or 4 months ago. He never landed on runway18. Given the choice, he would always choose the precision approach to the longer

runway. He had heard that 18 was challenging due to terrain, but did not have any experience with it.

He had heard that 18 was challenging due to terrain but had no real specifics. He said there was an ATC induced rushing going into BHM when flying from SDF. ATL center would keep you high to avoid conflicting with Atlanta traffic. Typically, with the "screaming descent" for the arrival, coupled with the high terrain near the airport, it was a rushed beginning to a complicated procedure.

Typically the PM would manipulate the FMC at the direction of the PF. The AOM had a limitation not to use the autopilot on a non-precision approach 50 below the MDA, and that was the reason you enter the DA and MDA in the FMC. He said as a technique only, as a backup to a visual, he would enter a lower value in the MDA field, like 200 feet above the field elevation. He said that would keep the flight directors available to a lower altitude. If you fly an instrument approach, 50 feet below the MDA the autopilot would kick off and the flight directors would go away. He would presume it would keep the autopilot on to a lower altitude. No one had shown him that technique, it was just self-directed to take advantage of an available glide slope.

There was a flight path vector, or "bird" that would basically help judge your glide path.

He did not do any go arounds with the accident FO during their pairing. She was appropriate and standard with her callouts.

When she was "zoned out", he made the comment to her that she looked a little tired, and she replied that she was a little. That usually only occurred in cruise flight. They would not brief fatigue before a flight.

On the weekend layover they had together, when they got in on Saturday morning, she jumpseated home, and then she returned on Sunday. She had a commercial ticket to commute. They met for dinner on Sunday night. He was not concerned about her being fatigued since she returned the day before they were scheduled to leave, Monday.

He said she flew the airplane well with a more challenging landing, especially for someone with a year's experience on the airplane. On more challenging landings, he could tell she had a year's experience as opposed to 5 years' experience. He briefed her on CRM prior to the flight, and set expectations, and set the stage for the trip, and she did not strike him as a timid or shy individual. He felt that she would have asserted herself in the cockpit.

Asked if she ever asserted herself during the pairing, he said the first time they flew into TYS, which she had flown into there before, and she provided him useful information based on her knowledge of TYS. There was no safety related event that required her to say anything.

He did not know her before the pairing

He had not made a fatigue call before. The line pilot group had a general culture of skepticism that they would be met with resistance.

When asked if he had ever seen anyone fall asleep in the cockpit, he said yes. He said their levels of night flying came with fatigue, because they were diurnal creatures working nocturnal hours. He said it would be beneficial to take naps in cruise.

He said a challenging airport they flew to was BUR, with a short runway, and heavy landings, you were inevitably at your worse after the flight out. "Sitting the sort" was also tiring.

He had full confidence he would not be questioned by the company if he did a go-around.

When asked about their schedules, he said that as they had gone to a full wide body fleet, schedules had become more challenging and fatiguing over time. They had more multi legs flights that led to longer duty periods Most of our rest was governed by the contract, not the FARs. There were also possibilities in the schedule being extended if there were sort or weather delay making a trip more difficult and fatiguing.

They had guidance in bulletins and the FOM on fatigue that was mostly common sense. They could tell you to plan for adequate rest, but sometimes you had a difficult time obtaining it. He did not recall any PowerPoint presentations on it, but that did not mean they did not have them.

He said CQ training was more driven to collecting data as opposed to ensuring pilot competency, having gone through both 121 and AQP programs. He personally did not find CQ as effective in maintaining proficiency, and thought there was a degradation of skills with CQ. Training was more scripted with data points to collect.

The interview concluded at 1622.

### 18.0 Interviewee: Rick Devore, UPS, Crew Scheduling Technician

**Date: December 2, 2013**
**Location: UPS Training Center; Louisville, KY**
**Time: 1215 EST**
**Present: David Lawrence, Katherine Wilson – National Transportation Safety Board (NTSB); Larry Ashby – UPS; Drew Middleton – Independent Pilots Association (IPA); Normand Bissonnette – Federal Aviation Administration (FAA); Nathalie de Ziegler – (Bureau d'Enquêtes et d'Analyses (BEA); Michel Bonnifet – Airbus**

Mr. Devore was represented by Jeff Johnston, Crew Scheduling Manager.

During the interview, Mr. Devore stated the following:

His full name was Richard Keith Devore, and he had been a crew scheduling technician at UPS for 14 years in April. He had previously held positions in customer service, accounting, and billing. His date of hire was April 26, 1990.

He knew the accident captain just through phone calls. He did not recall the sick call made by the accident captain on August 10, 2013. Asked if it was common for a pilot to call in sick and then to pick up the trip after a weekend layover, he said it depends.

He did not recall if he had taken a sick call from the accident captain before.

After receiving a sick call, he completed an "exception report" which included what the pilot was calling in for, and the pairing number or actual trip routing. He would then cover their sick call from the reserve or reschedule the trip.

He would also take fatigue calls. He would ask the pilot if they were unfit for duty and if there was anything we could have done to prevent the fatigue call from happening. He would then let his management team know and cover the fatigue call.

His duties and responsibilities as crew scheduling technician were to answer phone calls, and to set up transportation and hotels for crew members.

UPS used API Company for booking crew hotels. As far as transportation, he would contact different vendors that they had. After a crew arrived, the transportation would pick the crew up 15 minutes after a domestic arrival and 30 minutes after an international arrival. The transportation would pick up a crew from their hotel 90 minutes prior to a domestic departure or 2 hours prior to an international departure.

If a crew had a specific request for a hotel, such as a room nearby or away from the elevator, API would handle that. He did not receive complaints from pilots about hotels, crew logistics would handle that. If a flight was diverted and the crew needed a hotel in the divert city, he would contact API and they had a list of hotels that could be used.

He did not recall how many fatigue calls he received but he had gotten them in the past.

Asked what he did regarding a fatigue call after letting his manager know, he said there was a turnover sheet that was provided to the next person on shift that indicated any discrepancies or events. That was the only place where he documented the fatigue call. It would say who the crewmember or crew was, what routing it was, and that it was a fatigue call. He did not know what happened with the fatigue call after he passed it along to his manager. He did not know why the fatigue call was documented on the turnover sheet or what happened to that sheet afterwards.

He knew the accident FO through work. He met her through crew scheduling and they became friends. He was not sure how long he had known her. They never discussed her schedules or anything about the company. They discussed things in her personal life such as her dad's health, having a nephew and horses. Regarding her dad's health, they discussed her concerns helping to get her dad to the hospital or doctor's appointments. He did not know how often she had to help him with that.

Asked if pilots would vent to him about schedules when they would call, he said he did not have time to listen to venting by pilots when they call. They did not discuss concerns with him about their schedules. He believed pilots could submit complaints through IPA.

He had not been a crew scheduler at any previous airline. He did not know the number of sick calls he received at UPS. It depended on the type of day. He did not pay attention to the number of calls and whether they varied by one week or another.

He did scheduling for a lot of fleet types. He did not know if they number of sick calls he received varied across fleets.

He did not recall receiving any sick calls from the accident FO in the past year.

The total number of scheduling technicians was 48. They worked three shifts with 10-12 technicians on per shift.

He did not recall the accident captain discussing his schedules with him.

When a pilot called in sick, he would ask when they were going to pick up trip or when they could come back. Depending upon how long the trip was, it was not uncommon for a pilot to pick the trip back up mid-trip. He would tell them if they could not come back when they said, to call and let them know.

He did not recall someone calling in at the beginning of a trip to say they would be sick at the end of the trip, for example to call on a Monday and say they were going to be sick on Wednesday and Thursday.

There was no requirement for pilots to call in sick a certain amount of time before a trip. He had had a pilot call in 5 minutes before a flight to say they were sick.

The interview concluded at 1245.

**19.0 Interviewee: Larry Dunn, UPS, Flight Planning Support Manager**

**Date: December 2, 2013**
**Location: UPS Training Center; Louisville, KY**
**Time: 1400 EST**
**Present: David Lawrence, Katherine Wilson – NTSB; Larry Ashby – UPS; Drew Middleton – IPA; Normand Bissonnette – FAA; Nathalie de Ziegler – BEA; Michel Bonnifet – Airbus**

Mr. Dunn declined representation.

During the interview, Mr. Dunn stated the following:

His name was Lawrence Michael Dunn, and he was 49 years old. His title at UPS was flight planning support manager. He was the "primary user representative" for LIDO. He had been in that position since February 2011. Prior to that he was in a different role as a flight planning support manager, supporting other systems used by flight control.

His roles and responsibilities included interacting with Lufthansa support system, the vendor who supplied UPS with the LIDO flight product, on any identified user issues regarding the flight planning applications. He was a licensed dispatcher, and was a dispatcher for the first 6 years of his career at UPS. He was still current as a dispatcher.

Prior to the LIDO flight planning system, the UPS dispatcher had to rely on a variety of other systems on the dispatcher's computer station to perform their work planning a flight. That became a bigger problem as the airline grew. From a technical standpoint, they had a problem with that old tool that put their operation at risk and needed a hardware solution to protect their operation. They had had a high level hardware failure that also led them to look for something better.

They chose LIDO after they made a request for proposals for available solutions in the industry, and LIDO met the highest user percentage requirements as part of that proposal. The LIDO system made the job easier through integration and updating of data. In 1999, the first request for proposals was sent out, and in early 2000 the proposals were analyzed, and LIDO was chosen. The first part of the project was a "gap analysis" since UPS was going to be the first customer to apply the US OpSpecs into their system.

The integration process took 3.5-4 years, and involved working with LIDO on how to change their product to meet their requirements. The customers to LIDO, including the flight ops, were integrated, and they were able to successfully remove up to 13 separate business processes that the dispatcher would have to go through to do their job, and they were all combined under LIDO.

Initially, each dispatcher received a 2 week training course on LIDO. Prior to the cut over to LIDO, a week of training was provided. They also had a person on hand at the beginning to help with its use. For pilot training there was a series of joint articles in the IPA and UPS publications, bulletins through the FOM, and they had a joint effort with IPA to address questions through an established team.

The world area forecast center (WAFC) was the primary source for all the op met data. This included TAFs, METARS, upper air data, and significant weather charts (buffer data).

This information was made available to the dispatcher during the initialization of the flight from the flight list, which initialized an "airport suitability check" which queried the weather for the current and forecast weather conditions, and compared that to UPS limitations and suitability or conditions.

The flight briefing package relied on the same feed of weather information, but was produced on timing prior to flight. When the dispatcher produced the flight plan, the relevant airports were

sent to the briefing system they would use, along with the relevant use of the airport (destination, alternate, etc.), and the latest METARs and TAF information was produced.

Weather remarks were not included in the METAR data for the weather briefing. Prior to his returning as the LIDO manager in 2011, one of the issues within a part of the application called "the inflight monitor" was that the dispatchers were receiving redundant METARS for every relevant airport, and to solve that issue and cut down the METARs that were displayed, and the METAR with the relevant remarks "went away." Every METAR would come in twice, and it was an issue with the way the data was being published by the originator on the circuit they were receiving the data.

The flight control standards user group was the group who made the decision to remove the METARS with remarks to solve the redundant METARS issue. This group consisted of the flight control standards group. To his knowledge, he did not know if the pilots were made aware that the remarks section would be removed from the METARS, and he did not know if there was a risk analysis done on that decision.

ACARS weather requests were returned to the pilots automatically, and there was no action required by the dispatcher since it was part of the ACARS ground system. The system would look for the current METAR. The filtered information, without the remarks section, was what was sent to the pilots. The pilots would not know what remarks were being filtered out unless they contacted the dispatcher directly. The only way the pilots would receive the remarks in a METAR would be if they manually contacted the dispatcher.

The source of NOTAM information was from the DFS system, which was the German equivalent of the FAA, and it was the primary feed of information. NOTAMs were presented to the pilots using the same criteria. At the time the request was sent to the briefing system, all available NOTAMs would be gathered, and printed on the briefing paperwork.

There were other sources of NOTAM information available to the dispatcher, and they had access to flight explorer or the WSI system. Other sources of NOTAMs other than DFS could be cut and pasted into the briefing paperwork. All dispatchers used the LIDO system, and the source of NOTAMs for LIDO was DFS.

He had not reviewed the paperwork for flight 1354.

The FDC NOTAMs for the US were available through a connection between LIDO and the US main system. If the chart FDC NOTAM was published with an ICAO number, then it was already in the DFS system.

He had not looked at the BHM LOC18 chart since the accident. He did not know why the NOTAM for the night availability to the runway was not included in the briefing package.

He did not know why UPS did not go with LIDO approach charting since it was not part of that project.

He had been with UPS since 1990. There were about 67 dispatchers on the current UPS roster, with about 20-25% more as management dispatchers. For new hire dispatchers, they had a 4 day course to train them on the LIDO system to allow them to transition from what they may have been using at a previous carrier. It was classroom and hands-on training with the system. There was also area by area qualification training which occurred for several weeks before a dispatcher was released to dispatch airplanes for UPS.

The interview concluded at 1432.

### 20.0 Interviewee: Lauri Esposito, UPS, 757Z (international domicile) FO

**Date: December 2, 2013**
**Time: 1530 EST**
**Location: UPS Training Center, Louisville, KY**
**Present: David Lawrence, Katherine Wilson – NTSB; Larry Ashby – UPS; Drew Middleton – IPA; Normand Bissonnette – FAA; Nathalie de Ziegler – BEA; Michel Bonnifet – Airbus**

Ms. Esposito declined representation.

During the interview, Ms. Esposito stated the following:

She was hired by UPS as a B727 flight engineer on January 2, 1996. She was the IPA representative and chair for the fatigue working group. She served on the group with Michael Moody who also represented IPA. Jon Snyder was the UPS representative on the committee. For about the last 6 months, the committee consisted with just the three members although under their collective agreement an additional UPS representative could be a member.

Her roles and responsibilities on the fatigue working group were to answer crewmember questions about fatigue and the process if they call in fatigued. She also worked with Jon Snyder who was her main contact. They had an ongoing dialogue. She attended industry meetings and kept up on current issues.

The fatigue working group met once per month. If a fatigue case was recommended for sick bank debit by the fatigue safety action group (FSAG), then the fatigue working group would review it. She characterized her involvement as being in the "penalty phase" to determine whether to debit a pilot's sick bank or not.

Safety programs like ASAP and FOQA were very good programs; they had buy in and stakeholders (UPS, IPA and FAA) were involved. Dealing with fatigue was a little different. Fatigue crisscrossed into the industrial. Hours of service, duty periods and rest periods were all negotiated so they "kind of got tangled up in that sometimes." She wished safety could be kept separate. There was a kind of crisscross in that a pairing met the contractual requirement, it was legal, and it was safe.

When a pilot called in fatigued, he would call crew scheduling. The scheduler would take the pilot off of the trip and put him in rest. The crew scheduler can ask the pilot why he was calling in fatigued, such as hotel noise. The scheduler could not challenge the crewmember since the contractual agreement from 2006. Prior to 2006, how fatigue calls were handled was a "mishmash" and there was no process for how to handle a fatigue call. The company and pilot would work out what to do after the rest period, like pick the trip back up.

The fatigue working group was not a part of the FSAG. FSAG looked at de-identified cases. It was then sent to the chief pilot's office. She did not recall if the FSAG or chief pilot made the determination whether sick bank debit was recommended to be debited or not. If no sick bank debit was recommended, all was good. If sick bank debit was recommended, the fatigue working group would look at the case to see if there was something that could have been done differently to avoid fatigue. She acquired the fatigue group in 2009. At that time they were still doing a "mishmash" and it was not a smooth process. In 2011, Jon Snyder came on board and together they put the current program together. Since then, they met once a month. If there were no fatigue cases to review, they may not meet that month, or they would meet to talk about recent events and things that came up on the line. In 2011, they flushed out any fatigue cases prior to that and started from scratch and have a level playing field for everybody.

One problem that she saw was that the fatigue working group was the final phase. They did not necessarily close the loop. If the committee determines a pilot was rescheduled and that led to fatigue and therefore they would not debit his sick bank, they did not go back and say "let's not schedule another pilot that way." The process was linear. There were complaints about pairings and there were also event reports. It just got trapped; it got looked at but nothing closed the loop. They did not go back and say we need to change this pairing.

They had come a long way to now say "it's contractual, it's legal, just fly it" but there was still a mentality and it was not fully embraced. She had been working with fatigue for about 15 years. The science was not new in the last 15 years but rather there was now an acknowledgement of what fatigue does to human performance. The people she worked with understood that but it was not always totally embraced. It was a cultural issue. Where they did very well was that the scheduler would take call and remove the crewmember from the trip. If there was hotel noise and the crewmember was proactive like calling the front desk and the company to say he could not get rest, they had done very well with that. They had not done well with established pairings. The problem fleet was the A300 where they had the largest number of fatigue calls. The number one reason for fatigue calls was because of established pairings, which meant trips that were in the bid package and were not modified at the time of flying. The second category was hotels and then reschedules. The Airbus was the primary player. Typically the highest incidence of fatigue calls come in on Thursday and Friday, the latter part of week, when it was the third consecutive night and the science indicated that performance starts to decrease.

The committee ran the bid packages as a frame of reference to scientifically-based rules and found that the Airbus was not closely compliant with the Part 117 rules.

Regarding how long a pilot would be put on rest after calling in fatigued, she said it was for a legal rest period but some pilots might need two rest periods. A pilot would be put into rest until they were fit for duty.

How much a pilot might get debited from his sick bank was not an easy answer. For example, if a crew finished a trip and an additional leg was added on and then they called fatigued, what would the pay penalty be because they were already not getting paid for that leg.

Pilots viewed fatigue as a penalty system. It was a mentality. The no fault go around policy took a lot of pilot mentality of "I can fix that" to realize that ATC for example could have held them up to high. Pilots were mission oriented. When she talked to pilots on the phone they would second guess themselves and feel bad for calling fatigued. Some were maybe a little bit angry for being put in that situation where they were set up to fail.

Some pilots had gotten letters out of concern for calling in sick or fatigued. If the perception was out there that a pilot would be penalized for calling in fatigued, there will be a problem. Comparing a fatigue call to a go around, she said there was not as much buy in like with a no fault go around arena. There were cultural issues within the industry, the company and the individual.

She first got involved with fatigue in the late 1990s in on an aviation rulemaking committee for reserve rest, worked on scheduling, and was a board member for the IPA so she worked in the scheduling arena. Back then they were more actively involved and had more input into some of the changes that they wanted. And she was on the Part 117 ARC in 2009 for flight time-duty time. She kind of "stumbled" into it.

When the fatigue working group committee reviewed a fatigue case, they would look at the pairing, any previous complaints on that pairing, the company would put up the crew's schedule, they would look at the reschedule, and the schedule trend for the month. UPS had also hired Dr. Hursh as a consultant and the committee would sometimes model the trip. Finally they drew on their own experiences given the information to think about when they would have slept or when could they have slept.

When calling in fatigued, a pilot would also fill out an event report. The distribution list of people who would receive the event report was long but the fatigue committee asked the company to keep it small because they wanted pilots to be honest in those reports. The report consisted of a couple of boxes they could fill out. There were some issues such as a drop down box where one of the options to select for why they were fatigued was "sleep management." Sleep management could be interpreted that the pilot did not manage their sleep. However, in reality the pilot may have been woken by hotel noise and was not able to go back to sleep. The event report had sections at the bottom for crew comments and also recommendations.

Asked if there was an appeal process after the fatigue committee made its determination to debit a sick bank, she said the process usually stopped at that point.

When reviewing the case, if the IPA and UPS representatives disagreed on the outcome they were at a deadlock and the case would be elevated to the IPA president and the chief pilot. If they did not agree, then UPS could debit the pilot's sick bank. At that point, the pilot could grieve it through the grievance process based on the contractual agreement.

In a given month the fatigue working group committee might receive 20 fatigue cases but only review five that were suggested to debit a sick bank, so she could not say how many they received and reviewed on an average each month.

After each working group meeting, she kept her own records. The company would close out the event report and would contact the pilot. If the pilot did not fill out an event report after calling in fatigued, the company will debit the pilot's sick bank without the fatigue working group reviewing the case.

The fatigue cases reviewed by the fatigue working group were not de-identified. The only de-identified data went to FSAG. She would like the whole process be de-identified so that fatigue data would not get lumped with attendance data. If a pilot was legitimately fatigued, he would not get a letter in file. If not fatigued, no letter but trending data was mined and kept by the company.

Jon Snyder would present the findings of the fatigue working group to the company. She kept the executive board informed that they had met and what the outcomes were, such as the number of cases that had sick bank debited. She thought the company had come a long way and the trend of fatigue calls was going down, although she was not sure why that was. She thought they needed to be more proactive like SMS (safety management systems) than reactive.

Event reports were electronic and could be completed for multiple issues, not just fatigue calls.

When she reviewed fatigue cases, if she saw something that was a problem, she would coordinate with the scheduling group chair, Mr. Koch. Michael Moody also attended the scheduling advisory board meetings.

There were some pairings that were flown because they had always flown them like that. She thought changes were made on a cost neutral basis. She would like to see them start from scratch.

Reasons as to why fatigue calls happened included long duty periods sandwiched by short rest periods, multiple 24 hour layovers, four leg trips (two into the sort and two out of the sort), and lack of facilities throughout the system, especially internationally where a crew might sit on the airplane for 3-4 hours because there is no rest facility like in SDF. The rest facilities in SDF were very nice.

From a reserve pilot's point, one thing that was difficult was that they could be "turned out." They would leave SDF for a new city, layover in that city and then be turned somewhere else. They liked to see pilots be given perspective rest. They like pilots to know what the upcoming trip will be, such as you will be doing a 4 hour flight.

A fatigue case was usually reviewed in about 30 minutes but some cases were more difficult and required more time. For example, if a duty period was shifted earlier, that was more of a problem than noise at a hotel.

She had not calculated what percentage of fatigue calls received was actually deemed fatigue.

She reviewed the records since 2011 and did not see a fatigue call from the accident crew between then and the accident.

If a pilot had a complaint or concern about being fatigued or schedules, they could fill out an event report. She would get a copy of that report. A pilot could call the IPA scheduling committee or call her. It was a company report so the company might say they were monitoring it. If the report dealt with fatigue, she would review it.

She had not looked at the accident pairing recently but did recall that the entire pairing went beyond the three consecutive nights when compared to the Part 117 rules. The flight was an early duty window on backside of the clock.

She did not know the accident crew.

She only remembered that the accident pairing included a leg from SDF to BHM. The fatigue working group had run all of the bid packages through the Part 117 rules for comparison purposes. They saw more compliance with Part 117 on airplanes that had rest facilities like the B747-400 in ANC. The Airbus was the "problem child" in terms of fatigue calls. The Airbus was still the leader in that the bid packages were not very compliant with Part 117. It was for a variety of reasons. The Airbus and B757 domestic had pairings with more than three consecutive nights which was where the biggest problems were because that was the type of flying they did.

They compared the bid packages with Part 117 just for knowledge sake. They looked at the different rules. Also, IPA and UPS were under contract negotiations and they wanted more scientifically based rules to be considered in pairings even if they were not operating under Part 117 rules.

She did not know the trend data about sick calls for the accident crew.

Regarding training for fatigue management, the fatigue working group worked with the company. UPS also had a bulletin which she thought was in the FOM that talked about the FRMP (fatigue risk management program) and sleep management. It was a dual responsibility between UPS and the pilots. A pilot needed to show up to work rested and the company would make safe pairings. She thought they could probably do better to work with the company to educate pilots. There was nothing on fatigue in the last ground school she attended. When pilots come to night operations, she thought they managed fatigue by trial and error. The FRMP was supposed to have continuous education on fatigue.

The fatigue working group formalized the process they are using today in October 2011. She looked at the fatigue cases since 2011 but it was possible that she did not see a fatigue case from the accident crew if it happened between 2009 and 2011.

She was not sure if the company required a doctor's note when calling in sick. There was not a requirement that she was aware of.

When pilots had hours left in their sick bank at the end of the year, they could get paid for those hours or the roll the amount into their 401K. Dr. Hursh invited the fatigue working group to Baltimore to look at his fatigue models. When discussing how UPS paid pilots for unused sick bank hours, Dr. Hursh mentioned that UPS was different than other companies that did not pay pilots for unused sick time. She had heard the argument that paying pilots for unused sick hours could lead pilots to not call in sick or fatigued because they would rather receive the money at the end of the year. However, if a pilot called in sick, they could pick up an additional trip which instead of getting paid for could be used to restore hours in their sick bank.

Personal leave had to be requested by the chief pilot.

She had heard that FedEx pilots could "call" in sick through the computer. She had not had a discussion with anyone at UPS about using a similar system. She was not sure if anyone considered that. She did not know how FedEx dealt with the debiting of a sick bank. She thought it was not uncommon in industry to debit sick bank. What was uncommon was that UPS pilots got paid for the sick bank hours they did not use. At most companies, the pilots would lose unused sick bank hours.

The fatigue working group rarely deadlocked on whether to debit a sick bank or not. In the last month's review, she thought they reviewed four cases, one which resulted in debit of a sick bank and three that resulted in no debit. They maybe deadlocked on 5-6 cases a year.

She was not aware of a pilot calling in to say that another crewmember was fatigued. In some cases one crewmember will call in fatigued and in others the whole crew will call in fatigued.

She thought fatigued was discussed informally on the line through CRM. When pilots got in the crew van they would discuss how they were feeling and how they slept.

For the fatigue program to be successful, she thought they had to break through the cultural barriers and have an honest system like FOQA and ASAP. They needed all stakeholders involved. They needed a no fault fatigue call system. They needed to break through the internal and external cultural barriers, and also use the science of fatigue.

She would have to look at it historically and she was not sure the percentage of fatigue cases that resulted in debit or no debit of a sick bank.

Pilots worked on average 14 of 28 days but that could vary based on training or vacations. The number of vacation days per year received depended on how long the pilot had been with the company. She had been with UPS about 18 years and received 4 weeks of vacation, 2 weeks

which had to be taken together and 2 weeks that could be spread throughout the year. The number of hours a pilot accrued in a sick bank was about 50 hours which was paid out at the pilot's hourly rate. It equated to about one month's pay.

As a part of CRM, pilots would have casual conversation about fatigue in the crew van and then when flying they might talk about it. They might discuss that they were both tired and if it looked like one was doing something wrong to speak up, or they might do an autoland, or to back each other up more. It was common in the briefing.

She thought Dr. Hursh was at Behavioral Sciences in Baltimore. His modeling was pretty widely used in industry. His work was used for modeling for flight time and duty time rules. The company also had FRMS. UPS purchased Dr. Hursh's product and could put in schedules and look at the data.

Pilots in the US could not legally nap in the airplane. If the block time of a flight was more than 8 hours, they had an augmented crew of three pilots and they would rotate who had a rest period. In a two person crew, a nap could be the last line of defense if "someone is hanging in the straps."

If the FSAG suggested that a fatigue call not be debited from a sick bank, the fatigue working group would not formally review it. She would get that information from the company if there was an event report filed and the FSAG suggested no sick bank debit.

If FSAG stated that a fatigue call should be debited from a sick bank but the fatigue working group found that it should not be debited, the process stopped there.

She thought scheduling and fatigue should be integrated together into a comprehensive system.

The interview concluded at 1652.

## 21.0 Interviewee: Jonathan Snyder, UPS, B757 Captain and Flight Compliance Supervisor

**Date: December 3, 2013**
**Location: UPS Training Center; Louisville, KY**
**Time: 0753 EST**
**Present: David Lawrence, Katherine Wilson – NTSB; Larry Ashby – UPS; Drew Middleton – IPA; Normand Bissonnette – FAA; Nathalie de Ziegler – BEA; Michel Bonnifet – Airbus**

Capt. Snyder declined representation.

During the interview, Capt. Snyder stated the following:

His full name was Jonathan William Snyder. He flew both domestic and international routes. His date of hire at UPS was February 20, 1995. He was a line pilot for his first 5 years and then has been in management the last 14 years. He had worked in the flight training center for 15 of his 19

years at UPS. He was a DC8 second officer simulator instructor, captain check airman and captain designee. He then moved to the B757. He went to the simulator as a check airman and then there was an opening in flight compliance. He had been involved in fatigue mitigation for the last 3 years. He was the UPS fatigue working group chairman and also the administrator of the fatigue safety action group (FSAG).

As the fatigue working group chairman his roles and responsibilities were to deal with debit-no debit decisions based on the contract. He was also the IPA's conduit to the FSAG and to present other fatigue related concerns.

The entire fatigue process started with him. When a fatigue call came in, he was the first person to review it. He got the tape recording of the call and the schedule as it was planned and as it was flown. Within 24 hours of the call, he got the fatigue event report from the crewmember telling him what happened. Capt. Snyder started a packet right then. Then once a week he met with the scheduling supervisor to go over the fatigue calls that came in that week. In that meeting they had the schedule as planned and as flown, the event report, the tape recording and the safety model, which was developed by Dr. Hursh. From that meeting, they made an initial determination whether to "debit" or "no debit" a sick bank. Every fatigue call, whether the initial determination was debit or no debit, was then deidentified and sent to the FSAG. The events deemed debit after the FSAG review were sent to the fatigue working group, which met once a month.[5] The fatigue working group consisted on Capt. Snyder and two IPA representatives. They only reviewed cases that were suggested as debit. They treated every fatigue call as a safety incident. When a fatigue call was made that meant someone had called and said he was unsafe to operate and they needed to know why. Every call got reviewed at least three times, but sometimes four to five times.

The year 2013 had been the best year ever in that they had considerably less fatigue calls than last year and "monumentally less" fatigue calls than in 2011. They received about 100 fatigue calls this year. In the week prior to the interview, they received three fatigue calls but had received no fatigue calls for the two weeks prior to that. They placed a lot of emphasis on root cause analysis. This was all he did. The title for the weekly meeting he had with the scheduling supervisor was chief pilot's review. They met weekly and he was the chief pilot's representative at that meeting.

After that meeting, he sent a summary report of the cases that included the case number, pilot's name, date of fatigue call, date case was reviewed, event report number, and a summary. That summary went to his IPA counterpart and the system chief pilot. He was the only one with all details of the fatigue calls. It was just a summary given to the system chief pilot. He gave it the initial "sniff test." If it smelled bad he would discuss it with the system chief pilot.

Asked why he thought there was a reduction in the number of fatigue calls, he gave a lot of credit to his IPA counterparts. No one wanted any abuse of the program. IPA had emphasized some things and UPS had too. In 2011, a fatigue call was a free day off. They received over 300 fatigue calls in 2011 and there was no process in place to review and hold either the crewmember

[5] The flight compliance supervisor sent a follow up email to his interview on January 31, 2014, clarifying that the FSAG did not make a determination as to whether to debit or not debit a crewmember who called in fatigued.

or the company accountable. When they initiated the new process in 2012, they held the company accountable and the crewmember accountable as applicable. Once that word got out, things changed. There were still some outliers but the percentage was very small.

The fatigue process itself was not punitive. He thought probably two out of three fatigue calls resulted in no debit this year, then those go away and the crewmember was paid as normal. He thought 90% of cases that were debited were agreed on by the IPA representative on the fatigue working group. Pilots can restore the time debited from their sick bank in that same pay period or during the next two pay periods. Because they can restore their debited sick bank, the system was not punitive. They did not receive a letter in their file after a fatigue call. There was an exception history that the fatigue call was entered into. When a fatigue call came in he would review the pilot's exception history for the last 18 months. This was a "sniff test" for the fatigue call. He was looking for attendance issues to determine if this was something the crewmember may need help with. Crewmembers might not know they need help.

There was an MOU attached to the collective bargaining agreement that discussed the process if the fatigue working group could not agree on a debit-no debit determination. In the first half of 2013, there were five cases they could not agree on, and in the second half of 2013 there were only 3 cases. Those cases went to another layer of review which included the IPA's president, his IPA counterpart, himself and the system chief pilot. They called the cases where the fatigue working group could not agree "deadlocked" which were reviewed at this next level. It was up to the IPA president and system chief pilot to agree to debit or no debit a sick bank. If those two individuals could not come to an agreement, the MOU stated that the system chief pilot had the ultimate authority to make the determination. Those cases that rose to that level were things that the fatigue working group members wanted their senior management to be aware of and what could expect to be seen in the next contract negotiations.

The A300 had more fatigue calls than other fleets. A vast majority of the fatigue calls were "line no changes." These were lines that the crewmembers bid and received, and there were no changes to the lines, no reschedules, no major delays, no changes. There were no differences in the types of lines between the Airbus and the B757 domestic. It was a basic week on week off line. The second highest category for fatigue calls were hotel issues. At the working group level, those were easy issues to address. When there was a hotel issue, he made the system chief pilot, business manager and the crew logistics office, who dealt directly with hotels, aware of the issue and it was their responsibility to contact that hotel and find out what happened. Most times the hotel would admit to being at fault, like construction at the hotel.

When a fatigue call came in, the pilot was removed from the line. The scheduler who took the fatigue call could ask only two questions – was there an issue with the hotel and will you be ready to report for duty on a particular date?

How much sick bank was debited for a fatigue call resulting in a debit was determined outside of his department. He got a summary of those amounts because his IPA counterparts were interested.

The next column on the fatigue summary report was the date the fatigue working group reviewed the case and their decision. He sent that report to the system chief pilot. He gave him a generic breakout. He had never been questioned on his decision at an initial, fatigue working group or MOU review.

Regarding what issues about fatigue he had taken to the FSAG from the fatigue working group, he said it was usually pairing specific, or philosophical discussion of hotels, or philosophical discussion about inclusion of FSAG in the process.

FSAG did the fatigue education. In the FOM was the aircrew alertness guide. That was the main document for fatigue which provided best practices. Dr. Hursh provided the initial document that they used to write the FOM and they allowed IPA to review the document which was not usual.

Pilots received annual recurrent training on fatigue, during new hire training, and during CRM training, which was currently called the flight crew factors workshop. New pilots received refresher training on fatigue 2-3 years after employment as a part of the flight crew factors workshop. Pilots UPS hired were experienced and most were aware of the effects of fatigue on performance.

FSAG reviewed the deidentified accident pairing. The accident pairing reviewed well, modeled well; it was a pairing that had enough time in the sort facility to use the sleep rooms. The sleep rooms were there for the crew's use. As far as backside of the clock flying, it was a nice pairing. He related an example of a Miami-Bogota-Miami turn that was resulting in a lot of fatigue calls. They pilots called fatigued in Bogota after only 5 hours into the trip. They modeled it and determined they had been scheduling it four nights in a row and at end of the week pilots could be tired. They did not do it that way anymore. They reached out to Dr. Hursh who recommended based on the science that that pairing only be flown on the first night of a trip when the pilots would be most alert. They tried the pairing like recommended but the pilots came back and said they wanted that pairing on the second night of a trip so they changed it. The accident event occurred on the second night of the trip.

He knew who the accident crewmembers were and saw them in the sort but they never came up on his "radar."

He got fatigue reports where a pilot flew a pairing and then submitted a report that it was fatiguing. They had received 25 reports like that which were all deidentified and went through the FSAG process.

A pilot was required to complete an event report after a fatigue call. It was recommended within 24 hours, but they had 21 days. After 21 days he would send a personal email to that pilot to remind them it was an FAA approved program and the event report was required and that he would appreciate a response. This year he always got an event report after sending that email.

He was asked to clarify what night of the trip the accident occurred on. He said if the 60 hour layover in San Antonio was counted, the accident trip would have been the third night of the trip.

The fatigue modeling they used was pilot and engineer friendly. They would enter the employee ID number and a span of days. The system would pull up the schedule. He would have to make sure the schedule was correct. He normally modeled the trip the crewmember actually flew rather than the planned trip. The system presented a visual graph using green, yellow and red. It was easy to distinguish times when the crewmember was deadheading, day/night, etc. It was a very robust model. He thought every major airline used this model or had a copy of it.

They did a CFR Part 117 schedule comparison for discussion. The FSAG did a CFR Part 117 comparison for the accident pairing. It was looked at as part of a general discussion but he did not recall what the determination was. The accident pairing had enough time under Part 117 for perspective rest. Without the nap opportunities, it would not have modeled the way it did. They encouraged naps and had over 100 sleep rooms in SDF and he did not think they ever maxed them out. They encouraged naps as a part of their training. Any nap was better than no nap.

He had access to the pilot's exception history and CMS. The FSAG received deidentified information so they made their decision based on the data. The FSAG was responsible for doing a root cause analysis and information was deidentified so there was no bias.

He did not recall what the number of hours considered excess in the sick bank was. There was a payout to crewmembers who had excess hours in their sick bank that had not been used that year. Pilots were allowed to restore their sick bank in the current pay period or the two following pay periods. There were two pay periods per bid cycle. The payout was once a year or the excess hours could be rolled over into next year's bank.

The number of fatigue calls were small for "line changed," when the line they had bid to fly changed.

He responded to pilots event reports every step of the way – acknowledgement that it was received, the initial determination, FSAG determination including the root cause analysis, if it went to the MOU process. He acknowledged, updated and closed out the fatigue call.

Going into 2014, the general subjects instructor who will give the fatigue module had sat through the FSAG process so that he could tell students about it, such as if you were fatigued they did not want you flying so call in and you would be removed from the trip without question, and about the event reporting process. That was all good. He personally liked the process they had. He could think of no other condition they had that got the scrutiny that fatigue did.

He never worked for another airline and prior to UPS had spent 20 years active duty in the Navy.

No information related to fatigue was provided or required to be provided to the FAA.

The company took responsibility for the no debit fatigue calls. UPS operated under Part 121 rules but there was an extra layer of safety under the collective bargaining agreement. The FSAG looked at the root cause analysis. For things they found that might be systemic and that would be cause of concern, they would send those issues to the director of operations.

Asked why there so many fatigue calls related to line no changes, he said the A300 was a domestic operation. This year he could think of no fatigue calls that occurred outside the domicile. If a pilot made a fatigue call in domicile the trip would not stop because there would be a reserve pilot to pick up the trip. They had made adjustments based on some of those calls. For example a Salt Lake City turn was one of the problematic ones. It went out early and returned late, however it was very consistent. The models were okay and allowed for a consistent rest period. They used to schedule a week's worth of this pairing but they no longer did that.

Sometimes the requests sent to the company by the fatigue working group and scheduling advisory board were inconsistent. The groups had different agendas and sometimes worked against each other. For example, the scheduling advisory board might want to add a couple legs to a trip to make a bigger block of flying days to have a bigger block of days off.

When asked about the Ontario-Oakland-Anchorage pairing, he said it was a tough pairing. They had made some adjustments to it. It was a 50-50 responsibility. The crewmember needed to show up for that pairing and the company needed to make sure it went as scheduled. Those two things were needed for it to work well. He thought of three fatigue calls for the Ontario-Oakland-Anchorage pairing this year. Two of the calls were because of hotel issues and one was attributed to sleep management by the pilot; he commuted into the trip then called fatigued. He just got a fourth report about that pairing last week where a crewmember flew the trip and asked us to look at the trip; they would and it would be sent up to the director of operations. It will be looked at during the December meeting. The trip was okay from the domicile but it was an issue because many pilots based in Anchorage commuted from the lower 48 states. They had adjusted that trip and had massaged it previously.

Some A300 fatigue calls were baseline trips but a majority were not baseline trips; he did not know the percentage. He would hope they would have worked out those baseline trips that had day-night flips.

The reasons for fatigue calls being deemed debit sick bank were across the board, there was not a similar reason in a majority of calls. He pointed out that 90% of the fatigue calls with a debit sick bank result was agreed upon by the IPA and UPS representatives in the fatigue working group.

He did not know how often or what days the Ontario-Oakland-Anchorage pairing was flown. A large percentage of pilots based in Anchorage commuted.

He did not currently do line checks.

Asked if briefings had been changed to include fatigue threats due to the fatigue work being done, they tried to be specific in the manuals about what they should be briefing. They prided themselves on being standardized in how they did those things because they recognized that they operate on the backside of the clock for a vast majority of the flights. Due to circadian shifts, a pilot would not be operating at 100% on the backside of the clock. A pilot could be rested and prepared but it was a different environment, the toughest environment. Their pilots did a very good job at operating like that and those that took it very seriously would use those procedural things that they did as lifesavers.

If it was a non-augmented crew there was no inflight controlled rest allowed.

He would tell new hires that it was more difficult to manage fatigue the older they got.

His counterpart on the FSAG also sat on schedule advisory board.

The interview concluded at 0925.

## 22.0 Interviewee: Tony Copeland-Parker, UPS, Miami/Americas/Philadelphia/European Chief Pilot

**Date: December 3, 2013**
**Location: UPS Training Center; Louisville, KY**
**Time: 0933 EST**
**Present: David Lawrence, Katherine Wilson – NTSB; Larry Ashby – UPS; Drew Middleton – IPA; Normand Bissonnette – FAA; Nathalie de Ziegler – BEA; Michel Bonnifet – Airbus**

Capt. Copeland-Parker declined representation.

During the interview, Capt. Copeland-Parker stated the following:

His name was Anthony Lewis Copeland-Parker, and he was 58 years. His title was the Miami/Americas/Philadelphia/European chief pilot, and he had been in that position for two years this December. He currently operated the B757/767 as a captain. He had never operated the Airbus, but was the chief pilot from December 2009 to April 2010 in SDF.

His date of hire with UPS was September 1988. He was hired as a line pilot. He previously served as a B727 flight engineer (FE). He also became a line instructor on the B727 as an FE, and nine months later went into management. He was a B727 FE supervisor, and then a first officer and captain on the B727. He briefly left that position for two years and did special assignments around 1992-1993 as flight finance supervisor and contingency supervisor. In 1994 he relocated to Rockford, IL, opened the flight operations center there, and was an assistant chief pilot until 1997. He came back to SDF in 1998 and was promoted to DC8 training manager for 3 years, and then the DC8 standards manager for 3 years. He then became the SDF chief pilot. After that, he went on another special assignment as a labor manager, and then became the chief pilot on the B757, starting a portion of the operation in SDF and became the standards and planning chief pilot. In 2009 he was assisting as chief pilot on the Airbus for 4 months as Luis Corrons was in training to be the chief pilot. He never trained on the Airbus, only assisted in the oversight of the crews. In 2010 he returned to the B757 chief pilot for 2 years, and then became the chief pilot in Miami.

He knew the accident captain, strictly professionally. He was the chief pilot then training manager in January 2002, on the B757/767 at that time, and he remembered the accident captain

as he came through training in 2002. After that he only saw the accident captain "in passing" in the crew van or crew room.

He reviewed the accident captain's training records while he was the training manager sometime between January 2002 or September 2002, he was not sure when, as the captain came through to upgrade training from a B727 FO to a B757 captain. The reason he reviewed the captain's records was because he was "not proceeding on the established track for completion." The first time he came through training, the captain's instructors came to him to discuss his progress, and the accident captain then came to him and voiced his desire to return to the B727 as an FO. Capt. Parker felt that was appropriate.

He could not recall what the instructors told him about the accident captain's training, and it was during the ground school portion of training. The instructors were voicing their opinion of the captain's training, and the captain wanted to give himself more time to study and be prepared. The captain seemed like he "had high regards for himself as a professional and knew he wasn't progressing along" based on the standards.

He said the accident captain had not gotten to the final test, but he did not feel like he was grasping the material. Capt. Parker did not remember specifics of what issues the captain was having. He said the first time the captain removed himself from training, he never got to simulator training since he removed himself from ground school training.

He was not aware if there were previous voluntary removals from training by the captain.

When asked how progress was tracked through ground school, he said back in 2002 prior to the implementation of AQP, it was only tracked and recorded if the entire ground school training was completed. AQP did not take place on the B757 until 2004

Prior to AQP, there was no remedial training program. There may be some follow up training if a pilot was removed from upgrade training, but that would depend on the time he was off the line and away from his previous seat, and if there were landing currency issues.

UPS had an EAP (employee assistance program) program back in 2002. He was not aware of any personal issues the accident captain may have had, and did not know if the captain was referred to the EAP program. He did not have any conversations with the accident captain about his personal life.

He had a conversation with the accident captain about his training, but could not remember the details. It had something to do with the captain needing more time to prepare himself. He did not know how far in advance pilots bid and were awarded their upgrade training. There were no records of the captain's ground school since he never completed it.

He said the letter he wrote regarding the captain's voluntary removal from training was written to be in compliance with the union contract, and a requirement for the second event. The letter was written after his removal from the simulator portion of his B757 upgrade training, and there was a 5 year period for the captain to wait before he could attempt to upgrade again.

He recalled he had two conversations with the accident captain in 2002, the first one was for a voluntary removal in early 2002 from the ground school, and the other one was later in 2002 when he voluntarily removed himself from simulator training. He did not remember if the captain had a previous voluntary removal from training. The instructors the captain had for his 2002 simulator training were Joseph Bell, and Chris Dabbikeha. The conversations centered on what the best course of action would be. They talked about him transitioning to an airplane with an FMC instead of upgrading to an airplane with an FMC. The captain told him the B757 schedule was a better fit for him. He believed the captain did successfully transition as an A300 FO.

Under AQP, he did not know if there was follow up for pilots that removed themselves from training. He said special tracking was a program that, first an individual must be successful in completing training, but had training difficulties during the training. There was a provision in the AQP manual that allowed managers to enter a pilot into special tracking who had not failed a training event, and was safety related.

He did not remember the last time he spoke with the accident captain. He did not know the accident FO.

Upgrades at UPS were based on seniority. There was not a review of past training records when a pilot bids and was awarded an upgrade.

He never had any conversations with the accident captain about concerns with his schedules.

He was not sure if UPS tracked incomplete training removals. He said the FAA was notified of substandard events. He was not sure if the FAA was notified of voluntary removals from training.

He could not speak about the difficulties with going from a three-man cockpit to two-man cockpit. He could not speak to whether or not it was unusual for a pilot to remove himself from training twice for the same training footprint, and he did not see it as a red flag, but in the case of the accident captain he realized he was not meeting expectations. Capt. Parker just saw it as a person with high standards and foresight to remove themselves before failure.. Manuals for new airplanes were available to pilots prior to training. He did not know if the accident captain requested manuals to pre-study for his B757 upgrade, but assumed he did because the captain said he wanted to study more before the next time

The interview concluded at 1010.

### 23.0 Interviewee: Chris Williams, UPS, Director of Flight Operations

**Date: December 3, 2013**
**Location: UPS Training Center; Louisville, KY**
**Time: 1025 EST**

**Present: David Lawrence, Katherine Wilson – NTSB; Larry Ashby – UPS; Drew Middleton – IPA; Normand Bissonnette – FAA; Nathalie de Ziegler – BEA; Michel Bonnifet – Airbus**

Capt. Williams declined representation.

During the interview, Capt. Williams stated the following:

His name was Christopher Alan Williams, and he was 52 years old. His title was director of flight operations at UPS. His roles and responsibilities included ensuring the safe and efficient operation of the airline. He oversaw the day to day operation of the airline. UPS was safety oriented, everything else was downstream; they had to do things safely. He also monitored all the reports on a daily basis to ensure all performance of the airline was under control. If he saw deviations he would follow up to understand why they occurred, whether it was something to be mitigated or had conditions changed. They had to be confident that everything they did would have a safe outcome. He also looked at advance flight technologies like NextGen, and look at efficiencies in the operation. They also conducted monthly and quarterly trend analysis to ensure issues were addressed.

He reported to the vice president of flight operations, Matt Capozzoli. The previous person in his position was J. Barnes, who retired in April this year. Capt. Williams had been director of flight operations since April 2013.

He originally started UPS in high school as a feeder unloader. He went to the US Naval Academy and flew F14 Tomcats, completed two carrier deployments and served in Desert Storm. He became an F14 instructor, left the Navy to work for another company, and came to UPS as a line pilot in 1994. He flew the B747 classic as an FE for 1 year, then was a B757/767 FO in 1995. In 2000 he was promoted to management as a B757/767 training check airman for 2 years. He did a short stint in "SOC" (systems operations center) in 2002 for 5 months, and then transferred to DFW as assistant chief pilot until 2004. He then transferred to ANC as Asia/Pacific chief pilot for 2 years. He returned to SDF as training division manager for 1 year and then director of safety for 2 years. He was an international chief pilot for 2 years, followed by system chief pilot for another 2 years and then he became the director of operations.

He did not know the accident crew. He had reviewed some of the crew's files, and looked at their basic experience, history of aircraft they had flown, and recency of flight experience. There was nothing unusual in their records, and both had flown significant hours in the last year, were current and were qualified. He was not aware of any training or operational issues with either pilot. He was not aware of the accident captain's issues when upgrading to captain on the B757 or the CLT incident on the A300.

He believed the LIDO transition in dispatch occurred before his time there, and he believed he was in Dallas at that time. Currently the dispatchers fell under his responsibility as director of flight operations. He said there were some software improvements with the transfer to LIDO. They are always assessing the software for improvements. Early this year they had a voluntary self-disclosure which was relative to an ETOPs flight that was not picked up by the software

used by the dispatch. After testing they found no issues with LIDO but they were still investigating it.

He was not aware of any issues with the weather remarks not being included in the remarks section of the METARs issued to the pilots in their briefing package. He saw an event report within the last day that a dispatcher brought up that they are re-investigating.

He currently flew the B757 and B767 as captain. He said organizationally, flight control managers reported to the operations manager, Danny Faulk, reported to him.

The issue of METAR remarks being removed was new to him. He said a number of years ago they had a group look at making the information presented to the crews more concise and to streamline information that was important to them. He had first heard about the METAR remarks earlier this week.

The FOQA program was overseen by the safety department, and they supported the operation with that information. There was good information received, and had been an effective tool to see what was going on with the operation. It was an objective tool, and there was no subjective nature to the data. Operations got quarterly reports based on FOQA events. Also that information was looked at around the system. It had been an effective tool to mitigate and drive improvements through awareness and mitigation; it was a primary tool . He talked to the safety department multiple times a week. They converse about enhancements. He got weekly reports and a list of different events, and some analysis of things that were "sticking out." There were also quarterly meetings. They looked at FOQA, ASAP, fatigue, BDRPs, and any new trends and new events and made assessments on whether a fix was effective and if an issue still needed to be monitored.

Pilots and dispatchers were a part of the ASAP program. Mechanics were not a part of the ASAP program, thought he believed they had been invited in during specific events. ASAP reports was another topic they reviewed with the safety department on the quarterly meetings.

Regarding any trends identified on the A300 through FOQA or ASAP, he said they had an issue that they mitigated related to actuators and water incursion on the A300. There were no operational issues, and the unstable approach rate was very good. With FOQA, the trends were solid, but there were always areas they could do better and improve on.

He was notified of the accident by the dispatch manager. He had hoped it was a drill. He collected his thoughts, moved toward notification, certifying that it was real, reconfirmed things, activated the phone notification system, and then pulled together the emergency response team.

He looked at the BHM approach plate, saw the 3.28 glide path with a 2300 foot FAF (final approach fix) crossing altitude, that IMTOY was 2 miles to the runway, and it required the visual glide slope to operate. He was not aware of the night limitation for that approach prior to the event. He had not seen the detailed release package but was briefed on it and said it was a legal dispatch for the flight since there were two approaches there, including the RNAV approach.

There was a NOTAM that removed that night prohibition, and that chart had not been updated. They had two options to get into the airport, the RNAV and the localizer.

He flew non-precision approaches. He found that a non-precision approach still needed to be configured and the crew needed to make a steady descent to the airport. Some of the tools might be different. Non-precision approaches were very procedural-based, and there was a briefing guide to review and refresh all of the things a pilot would do before the commenced the approach. They also trained extensively for non-precision approaches during every recurrent training.

When asked what challenges he saw going forward with the airline, he said the biggest thing they were working on was the transition to SMS, and they were waiting for the final documents on it. SMS was about having a closed looped system, identifying, assessing and mitigating errors. That was the next step for them, to move forward with the FAA mandates. Data was really critical and they analyzed the data and the situation to see what was needed moving forward.

Regarding the schedules that the pilots flew and the challenges of the flying, he said if you went back a number of years, the business growth had not been what they expected, and some of the block hours had been reduced, not increased, for instance when the Asian market would slow. They had not seen the growth they wanted to see over the past few years.

They had a policy for management pilots flying the line, and they asked those pilots to fly domestically 6 legs in a month and 10 legs in 2 months, and internationally 4 legs in a month and 7 legs in 2 months. He did not always meet those requirements, and would then go in the simulator and then fly with a check airman on the next flight.

Quarterly meetings with safety discussed fatigue issues. They looked at the progress of the working group. It was a hot topic in the last year and they made some good progress working well with IPA. Fatigue was a situation where in the next year and 5 years from now they would understand more. That was really where they were still learning, had Dr. Hursh to review their process, and would continue to improve. They were pleased with the progress. Since he had been the director of operations, there were no specific issues brought to him lately. Low risk issues they could mitigate. Moderate risk issues would rise to his level for review; it depended on what the issues were and he may or may not be informed of it. There was one issue the group was getting information on regarding a specific domestic pairing, but he did not have any additional information on that.

There have been no scheduling issues brought to his attention regarding the A300. Since the accident, they had put together a cross functional group of management, check airman and instructors to look at industry trends to identify any "gaps". They were looking at pilot monitoring, automation, human factors, and best practices, things they could glean from other operators or their study to consider implementing. The group was specifically tasked after the accident and the deadline date for a report to him was about mid-January 2014.

They had an important tool called the chief pilot hotline to get information out about trends in the operation. They also did quarterly reviews with IPA. They also had quarterly meetings with FAA to review data and trends. It was important to him to arm our pilots with what was taking place in the operation. They sometimes created bulletins if they saw a challenging airport. Safety also made arrangements to send an ACARS message at top of descent at challenging airports providing information based on the experience of pilots. Safety would make those arrangements through the automation. They would review this on a quarterly basis to see if it was having an impact.

He had not flown the Airbus. When he flew, he tried to get out and do an international trip at least once a year, and would also try to fly through the night sort so he could interact with the crews and understand the challenges on the line. He had flown two legs into and out of the sort before. Most of his flights were at night.

He would try and hand fly the airplane based on where he was going. For instance, going into someplace like JFK, he would want to use the automation to the maximum extent. Other places like DSM, he would try and hand fly the airplane. Taking off out of MIA, he would turn the automation on early so they could monitor things like the route and weather. Once a pilot started hand flying, the pilot monitoring duties increased.

From all the data they looked at, there were no issues with BHM, so they reviewed other operators' information about BHM post-accident to see what they did and what UPS could learn. UPS decided that for runway 18, they would prohibit night visual approaches, and the crew must use the PAPI and electronic flight path. If they went above or below the path, they would go around. Runway 36 was also now prohibited.

When asked if CFR Part 117 could be a potential benefit to UPS, he said it would not. He stated that UPS must ensure the outcomes were safe however in many things they did, there were alternate ways to achieve that. What they did was different than the passenger operators. Passenger carriers flew in the daytime, flying all day. In their operation, their planes were not flying in the air all the time because they were going through the night sort. A lot of their duty times for their crews were spent in areas where the crews could get rest, and not spent entirely having to focus on instruments. Safety was paramount to what they did, but he believed his pilots were adequately prepared for their flying given the unique nature of what they did.

He said the fleet managers and training standards have a good dialogue with the manufacturers and would seek out information from them. His team stayed close to any new nuances or challenges they were trying to gain information about. They had a lot of technical manuals available to them, and the fleet managers would get all the bulletins related to their fleet. There were the websites about "my fleet." Anything electronic they would capture and make a determination. There are also phone conversations between the fleets and the representatives of the manufacturers.

The program development group was devised to look for opportunities to improve the airline and operate the separate fleets commonly. Their goal was to be standard since that was the key to everything. Sometimes they assessed that Boeing may do something one way, while Airbus did it

a different way, and they assessed the negative outcome of having things done a certain way. Ideally, they would like to do everything the same way, but systems differences might prevent that. They were always looking for a simpler way to do things.

He said the non-precision approaches that they flew had various glide path angles, and it was not uncommon. Those differences should be part of the approach brief. A discussion of where you were at given points along the approach was critical to a successful non-precision approach. It was critical to brief the rate of descent when you crossed the FAF to ensure the flight was stable.

He personally had not flown into BHM before. The top of descent ACARS message that could be sent to the pilot via ACARS was a tool to inform the pilots of challenges seen going into that airport. This information might have been available on the 10-10 page, but the message was an elevated communication tool for UPS to get information to crews at a point and time to better arm them. It was not available at all airports, and it was predetermined at high risk airports that had been identified through FOQA data. BHM was not identified as a high risk airport at UPS, and they had not seen any indicators to show BHM was high risk.

The members of the group formed post-accident would provide their report to the director of training and standards. The group was made up of flight qualified managers, line instructors, and a few others, and would include a self-assessment to learn and improve from other operators in a "360 degree search" for best practices. Flight operations were also a part of that group.

The interview concluded at 1138.

### 24.0 Interviewee: Luis Corrons, UPS, A300 Chief Pilot

**Date: December 3, 2013**
**Location: UPS Training Center; Louisville, KY**
**Time: 1305 EST**
**Present: David Lawrence, Katherine Wilson – NTSB; Larry Ashby – UPS; Drew Middleton – IPA; Normand Bissonnette – FAA; Nathalie de Ziegler – BEA; Michel Bonnifet – Airbus**

Capt. Corrons declined representation.

During the interview, Capt. Corrons stated the following:

His name was Luis Corrons, and his current title was A300 chief pilot. As the A300 chief pilot, he was responsible for the "day of operational happenings" of 52 Airbus aircraft, which included about 500 pilots and their human and administrative needs. This included oversight of the pilots up to and including discipline and making sure they had what they needed. He was not responsible for flight standards, and he was on the original A300 acceptance team. He had 25 years at UPS, and had been chief pilot on the A300 for about three and a half years. Prior to that position, he was the B757/767 training manager from 2008-2010.

He knew of the accident captain. He did not have a lot of contact with him but he was the fleet captain. He was not sure, but he may have personally met the captain. There was nothing from a disciplinary standpoint that stood out regarding the accident crew. He thought the captain had an event one time that involved turning off the runway in CLT. When shown a copy of the FAA PTRS entry on the CLT event, he said he did not recall if he actually spoke with the accident captain regarding the event, or if it was one of his assistant chief pilots. Operationally, if there was any remediation, he would make that call, but did not remember if that occurred on that event. He did not remember if the accident captain was line checked following the event, but normally if he requested it to occur, it would happen. If nothing stood out following a line check, he might get a report that it went well and there would not be any "major discussion about it." He did not recall if he made a request for special tracking for the captain following the event. He did say that, in his opinion, the CLT event could rise to the level of special tracking for the captain. He said as a flight operations chief pilot, he had made suggestions for special tracking of a pilot on the operations side, but not very often, if ever. He could not speak for the training side.

On the Airbus, the responsibility to build the approach into the FMC was the pilot monitoring (PM). If the captain was the pilot flying (PF), the captain had the latitude to build the approach into the FMC, but it was the SOP for the PM to build the approach. The PF would then brief the approach. The PF would usually transfer control of the airplane when the briefing was to be conducted, but good CRM would dictate who would do that. For instance, below 10,000 feet with a runway change, the PF may not transfer control and have the PM brief it. He was not sure if the briefing by the PF was an SOP, but that was how it was taught.

When a pilot briefed the approach, they verified everything from the chart and made sure the information from the FMS and instruments were set correctly.

Regarding CFIT (controlled flight into terrain) training on the Airbus, he thought they saw it every year in CQ. The initial CFIT training he received was back in 1999 or 2000, and it was the standard AOM CFIT procedure. The CFIT training they saw in CQ would change. He did not recall if he had ever seen a CFIT training event during a non-precision approach.

He said the LIDO system was a more complete system. He did not recall if the weather package he received in a pilot briefing package included the METARs remarks section, but he saw a lot of weather reports so it was hard to remember which ones had it and which ones did not. The ATIS weather would include remarks in the METARs, but he could not recall if they were in the METARs for ACARS requests.

For the incident in CLT, he did not know if the accident captain had filed an ASAP report on the event.

For the DH on the Airbus that showed up on the PFD, they would set it for reference only. They would put a value in there and leave the DH light on. There was no aural warning for the DH light. They did not want to have a value of zero in the window since it did not provide any information to the pilot. The DH bug on the barometric altimeter was also set.

Regarding use of the "bird" flight director, they did not teach it since they had found it difficult to interpret, but they did not prohibit pilots from using it.

For the 1000 foot call that the pilot would make on an approach, the pilot should reference the barometric altimeter based on what was briefed. It was not their procedure, nor was it taught, to use the radar altimeter for the 1000 foot call since the terrain below you could vary. He did not recall a pilot ever using the radio altimeter.

The type of single cue flight director on the Airbus was "spec'd out" on the Airbus for fleet commonality. He was not part of the spec team for the Airbus. He was not familiar with any Airbus software upgrade option that would show the vertical speed value on the FMA.

The interview concluded at 1330.

### 25.0 Interviewee: Larry Parker, UPS, A300 Standards and Training Manager

**Date: December 3, 2013**
**Location: UPS Training Center; Louisville, KY**
**Time: 1400 EST**
**Present: David Lawrence, Katherine Wilson – NTSB; Larry Ashby – UPS; Drew Middleton – IPA; Normand Bissonnette – FAA; Nathalie de Ziegler – BEA; Michel Bonnifet – Airbus**

Capt. Parker declined representation.

During the interview, Capt. Parker stated the following:

His full name was Lawrence Anthony Parker, Jr. and he was 61 years old. He had been the A300 standards and training manager at UPS since 2009. His roles and responsibilities included managing the training of crewmembers and standards. The department used to just be training but now included standards and training under one umbrella. He was also in charge of initial training, qualification training, continuing training, line checks and OE, and releases to the line. Initial training was a part of our ground school and systems training and he oversaw that as far as the A300 was concerned.

The A300 training program had been under AQP since 2006.

He did not know the accident FO that well but might have met her on several occasions.

He started at UPS in 1988 and thought the accident captain started in 1992. He would see the accident captain in the operation and over the years they would run into each other. It was more of a cordial friendship type of relationship.

After the accident, he looked at the training records for the accident crew and did not see anything that caught his eye. He did not look at their training records prior to their training on the A300.

He was shown the letter that was sent in 2002 regarding the accident captain's voluntary removal from the captain upgrade program for the B757. He thought it was the first time he had seen the letter but it was pointed out that he was cc'd on the letter. He thought he probably received that letter because he was the Louisville chief pilot.

Pilots did not very often remove themselves from a training program. It was very unusual when that happened. It would be extremely rare that a pilot would remove himself twice.

Special tracking was like SPOT (special purpose operational training) training and there were several types. Mandatory or "M" SPOT occurred anytime someone failed a line check and they would have to come back in 6 months. Recommended or "R" SPOT occurred when an instructor/evaluator felt that a pilot needed special tracking. The purpose of new captain SPOT[6] was to have a new captain return for additional training to make sure that pilot was on track for being a new captain. Voluntary spot occurred when a crewmember came in and said he would like more work on an area. There were not very many voluntary SPOT training requests, maybe one or two right now. The reasons for voluntary SPOT training varied but a main reason was that pilots wanted to be fully prepared on all the company's policies and procedures in the airplane so they could be "sharp" for recurrent training. There was "no jeopardy" when coming into voluntary SPOT training.

He clarified that "R" SPOT training occurred when an instructor/evaluator felt a pilot was not at the particular level of standards expected or if they took some extra training and that pilot would benefit from coming back for SPOT training in 6 months. The recommendation could come from outside of the training department but that did not happen very often.

He did not think voluntary removal from training was an automatic special tracking although he thought it would probably be a good decision by the instructor/evaluator.

He was asked what he would do if a pilot had voluntarily removed himself from training twice. He said if a particular crewmember was attempting an upgrade from FO to captain on the same fleet, he would probably ask the instructor/evaluator what the reasons were. If it was a performance issue, he would look at it and might recommend special tracking. It would depend on the circumstances. If a pilot voluntarily pulled out, it would also go to the chief pilot's office and they would sit down and look at the reasons that they pulled out. He did not think that prior to AQP that there would be any documentation that a pilot voluntarily left training.

The PM would usually build the approach in the FMC; that was how they trained it. The PF should also be able to back up that person to make sure it was correct. The PF would transfer control, brief the approach and make sure everything was set up correctly. It was what they trained, but he could not answer if it was an SOP. The PF would brief the approach.

The briefing completed would depend upon the type of approach being flown. If it was a precision approach, he would use the Jeppesen chart and reference the FMC, brief the approach minimums, lighting, runway specs, and would check the FMC to make sure the information was

[6] SPOT training can occur under special tracking or regular training.

in there correctly along with the missed approach. If it was a non-precision approach there was a non-precision approach briefing guide and that was to be used along with briefing the approach as well.

He would make sure the FMC was correct by going through each part of the FMC and verifying that it matched the chart.

Extending the centerline was normally done for every approach. It might not be done if they got a direct to an initial approach fix. But if they were on a vector they would extend it. They extended the centerline for situation awareness.

There was guidance for remedial training in the AQP manual. For example, if someone was not meeting the standards within a footprint, the instructor/evaluator would come to him and say this pilot needs additional training. Capt. Parker could give two extra training events at that point. If a pilot needed more training, Capt. Parker would have to go to his boss and they would discuss if this pilot needed additional training or not. If no additional training was allowed, that pilot would be removed from the training footprint and it would be sent to the chief pilot's office. They would discuss the reasoning of why that pilot was not meeting the standards. The chief pilot could put that pilot back in the original seat that he came from, or could recommend additional training which would be up to Capt. Parker's boss. If a pilot failed LOE, Capt. Parker could allow up to two additional training events. If a pilot could not pass a training event, it went to his boss. This was outlined in the AQP manual.

CFIT training was provided in CQ and initial qualification training. They would build that scenario in a high terrain area like Roanoke and would use it as a SPOT training. There was no surprise event in SPOT training. But it was expected that they would do the correct procedure. He did not think they had done in recent years an event that combined an approach with a surprise event like CFIT or EGPWS. He could not recall when they might have done an event during a non-precision approach.

Regarding whether remarks were included in METARs used in LOFT training, he said he would have to go back and double check.

He was asked to clarify the difference between recommended SPOT and remedial training. Recommended special tracking was when a pilot had to come back for training in 6 months. Remedial training was when a pilot was in a footprint and was not meeting the standard so that pilot got an additional training event. Remedial training might trigger special tracking.

Capt. Parker was asked what "no jeopardy" meant when a pilot was in voluntary special tracking. He said a pilot would want to come in and improve their skills. If that pilot came and did not do well, this would generate additional training. Based on this response he wanted to clarify that there would always be some jeopardy for a pilot who came in for training. If a pilot was successful in voluntary special tracking training, he would still be graded.

It their conversations, the accident captain never mentioned concerns about his schedules or the Airbus.

Regarding whether UPS had ever fired a pilot for poor performance in training, he had seen pilots take a leave of absence or early retirement. He remembered one pilot the company did not want to continue in training and he thought that pilot took early retirement. Before it got to the point of firing a pilot, crewmembers would usually take a leave of absence or early retirement. On the A300 he could only think of one person that went that route. There were about 400 A300 pilots.

Pilots were trained to use vertical speed during an approach and it was done this year in training. He thought they probably did not train it a year ago but it was usually included. If there was a profile or VNAV approach available into an airport, they expected pilots to do that.

There was a special briefing guide in the AOM. There was a non-precision approach briefing card and also a briefing card for using vertical speed. They currently used hard cards and could also access it on the iPad.

If a pilot encountered a stressful event, they had SMEs on duty on our fleet that pilots could talk to. There was also an ASAP program for pilots to vent on what happened.

They wanted pilots to use the briefing guide and did not want them to go by memory. Based on the ground speed, the pilot could calculate what the vertical speed should be. He expected them to back the vertical speed approach up with making sure they were on glidepath. They would increase or decrease their vertical speed based on the airplane's position in relation to the glidepath.

When hand flying, the PM would make inputs to the mode control panel.

The 1000 foot call was philosophically a stable approach call. They had had discussions to change the call out in the training and standards department. Right now they were in the process of changing the 1000 foot call to "1000 feet, altitude set, stable" but it was being held up as they waited for the AOM to come out. He thought the revisions to each AOM had been agreed upon but they were waiting for the FAA to approve it. For the A300, the APM had seen the change but it had not been submitted to the POI. They had not done a formal submission for approval for the A300 AOM.

The 1000 foot call was based on the barometric altimeter; it was based on msl (mean sea level).

He could not see where a pilot would be trained to start an approach in profile mode and then switch to vertical speed. They would expect them to be in profile mode if it was available. Asked if a pilot was trained to intercept a vertical path from above, he said if a pilot was doing a vertical speed approach he would expect the pilot to be at the final approach crossing altitude to start that down.

If a flight was not on the profile at the FAF he would expect the crew to abandon the approach. He believed they had trained that if they were not stabilized by the FAF. However, there was no specific scenario trained where the profile would not capture that the instructor would watch for

the crew to go around. A crew may not set the approach up correctly so the path would not capture, and they would expect them to go around.

They had increased training on non-precision approaches. After the accident they looped back to determine any gaps in training. It was kind of hard to zero in on anything to fix not knowing the cause of the accident. They were looking at what industry did to help identify gaps in their training. Changes to procedures as a result of the accident were only in the initial discussions right now.

The interview concluded at 1457.

### 26.0 Interviewee: Larry Ortkiese, FAA, UPS Supervisory Principal Operations Inspector

**Date: December 4, 2013**
**Location: FAA CMO[7]; Louisville, KY**
**Time: 1312 EST**
**Present: David Lawrence, Katherine Wilson – NTSB; Larry Ashby – UPS; Drew Middleton – IPA; Normand Bissonnette – FAA**

Mr. Ortkiese was represented by Brooke Lewis, FAA General Counsel, via phone.

During the interview, Mr. Ortkiese stated the following:

His name was Larry Allen Ortkiese, and he was 62 years old. His title was Supervisory Principle Operations Inspector (POI) on the UPS CMO (certificate management office) certificate. He had been in that position since June 2006. A carrier was considered large when it had over 100 aircraft. They were organized differently than other CFR Part 121 CMOs. As a supervisory POI he was both a supervisor and technical expert. He supervised the oversight of the airline as well as approve government trips and leaves. He said "it is a little daunting." He had two "J"BAND supervisors that assisted him, since it was a good size certificate. UPS was the 8th largest in the world. His job task was split between the technical side of the oversight and his supervisory role, but he used to do more technical stuff than he did now.

Regarding the CMO's organizational structure, they were matched with the company, and it reflected what they did over there. There was an operations side and a maintenance side, as well as a ground services side that interfaced with the trucking side of the company. UPS was a large business that did $1.5 billion of revenue every 90 days and served 220 countries.

The maintenance side also encompassed engineering. They had an adjunct avionics section as well. He said he worked well with maintenance folks. The PMI was Jeff Hutchinson. There were about 20 of them on the operations side. He had two assistants on the technical side; Bill King on the certification side, and Dave Lalahn for the ATOS oversight function. There was a large paper flow that was more than one person's capacity. There were about 5-6 program managers. The A300, B767 and B747 each had one program manager and each had assistants. The B757 had two APMs and the B747 had one APM in ANC. He also supervised the technical assistants.

[7] Certificate Management Office.

His background included over 27 years spent in the US Air Force, starting out with instructing on T38's. He flew the B52, then the F4, C130, and BE1900. He started at the FAA on the DHL certificate, stayed about a year, and then became the POI on the Comair certificate. When Comair was bought out by Delta Airlines about a year later, he moved back to the DHL certificate for 3-4 years before becoming the POI on the UPS certificate. He was typed on the A300, and had received his A300 training through the FAA in Miami. He no longer flew; his job did not involve that. If he had a straight POI position, it might involve flying but not at his level.

He learned about the accident from a phone call he received from the UPS director of operations at about 0600 on the day of the accident. He then called Bob Clark, and then Pat Pauley. They then came to work and began to process the notification list. Our regional 201A and 201B were split under the regional manager and he was at the CMO that day. They processed the required paperwork, and then sent a message to the FAA communications center in Washington, DC. He said that after about 2 hours, "we lose control of the process."

He did not conduct any check rides or line checks at UPS since that was a function of the APMs. He assigned the work to the APMs, and tried to keep each APM qualified. He worked on the AQP course work with the policy branch manager, Mr. Kevin Kelley. They had been "tag-teaming" their training program. There were different types of meetings they had with UPS. They used those meetings and interaction to see where they could make event sets out of the required inspections. He would meet with the training management about every two weeks. They had quarterly meetings with the UPS safety department, and the ASAP and FOQA was reviewed at those meetings. UPS was organized so that safety had control of the ASAP and FOQA data. The pilots and dispatchers at UPS had ASAP MOUs with the FAA, and the mechanics were expected to have ASAP soon.

UPS had about 40-45 APD's, and about 180-190 total check airman. The CMO had a "budget debacle" going on, and some of the check airmen were not getting their required 2 year check ride with the FAA due to the FAA staffing situation, and the check airmen were becoming dequalified. About 90% of APDs at UPS were management pilots and about 70% of check airmen were mostly IPA union members, and unique to UPS was the fact that all of the check airman training (except for OE) was done in the simulator.

He would "occasionally" conduct enroute observations at night, but mostly he was "meeting'd up" during the day. UPS was a dynamic company with regards to changing the components of the operation.

He characterized his communication with UPS as "good," and said they were more "informal than formal." He said they expected quality recommendations for APDs and check airmen. On the meeting with the management, he was away for about a year and returned this past August. Currently UPS was in their peak season, and he was trying not to involve them in many things during this busy time.

He knew the UPS director of operations, director of safety, and director of training standards very well. They were launching into AQPM volume one.

He communicated regularly with the line crews. He knew more of the crew members than most since he was the active duty guy at the local National Guard, and he knew most of them through his ties with the Guard. He said they were all "good guys."

When asked if the line pilots expressed any concerns to him about their quality of life, he said pilots liked getting paid well, but almost all pilots complained about the backside of the clock flying. Most comments he would hear over the last couple of years were about the enhancements to the publication (iPads) and training systems they had for those and the comments had been "quite good." The iPad program was a voluntary "opt in" program. Some were more challenged by the technology than with other devices. The system was set up originally to handle the pilot's own personal iPad. The iPad for the pilots was loaded with the UPS manuals, and was icon driven. He said they very much liked what JetBlue and American Airlines had done with the use of the iPad, and there was no need to reinvent the wheel. He was not sure if the iPads also included airplane performance. The Jeppesen approach plates were included.

He had oversight authority of the flight control office, but had a dispatch inspector (Jack Heinlein) to deal with specific flight control and dispatch oversight. They had traditionally not had any issues in that area, and traditionally issues were with operational control. They had seen UPS use their "contingency section" as an operational control function. For example, most airlines had an SOC or OPS control decision, but at UPS those functions also interfaced with the trucks. The contingency department would then direct the crew to do some certain function based on the trucking schedule and the dispatcher would be out the decision loop. That was not how it was supposed to work with a CFR Part 121 operator. They encouraged UPS to change that aspect and they no longer do that anymore. Recently UPS had an event where an assistant chief pilot was giving bad advice to a flight crew. The crew followed the assistant chief pilot's advice, even though the dispatcher did not agree with that advice. UPS self-disclosed the event and it was corrected with clearer language in the UPS manual.

When asked about increased oversight of the airline following the accident, he said there was increased oversight for a while, and then there was the government furlough that stopped everything. For their office, trying to reestablish the program after a 3 week layoff was "tough." He thought it would take 6 months to recover from the furlough. One of the things that came out of the mishap was a question of what mode the pilots had selected while executing the approach into BHM. He was a strong fan of the profile mode for non-precision approaches, and was not sure why anyone would even execute a vertical speed descent on a non-precision approach. What they were looking for was how to improve training and how to emphasize the profile mode versus vertical speed mode on non-precision approaches. They were evaluating the program and trying to get data back in to figure out where they were and they were looking at training to see what UPS was doing. He would have to check to see if he put out a ConDOR (Constructed Dynamic Operations Report[8]) to have his APMs look at non-precision approaches and report back to him with what they saw. There was extensive paperwork through ATOS oversight, and EPI/SAIs. Every "no" was required to be tracked to a conclusion whether it be CONDOR, DOR, SAI or EPI. UPS did a wonderful job with discussing those "no's."

[8] A ConDor is when the FAA CMO sends an ASI to perform a specific inspection.

Regarding the overall safety culture at the airline, he said "I don't have anything to compare it to" since there were not many carriers who were attached to a trucking industry, which was something you did not normally see. If he looked from the 20,000 foot level, it would look very good, they had a pretty good 24-26 year history. He would not say that the UPS flight 6 accident was a "one off." With the BHM accident, he could not say too much, but the everyday person at UPS was well standardized; what was done right or wrong in SDF was done right or wrong in Germany, etc., since they were very standardize. UPS was selling time as their business model, not packaging.

He had not made any recommendations for changes at UPS since the accident since the facts were still not in on the accident. There had been a lot of changes at the airline prior to the accident, but none since the accident. He was not aware of any changes currently requested by UPS that were on hold because of the furlough.

He had no concerns about pilot proficiency on non-precision approaches.

Regarding training difficulties at UPS, he said they had a peculiar setup and aspect to their training. There were some folks who "do aviation well, and some who don't." Pilots came to UPS with an ATP, and they taught them CRM and situational awareness, not basic flying skills since they should already have that knowledge. He could not remember anyone having difficulty being able to take off and land. Most training difficulties he saw were related to CRM, not flying skills.

Downgrades in training (substandard events in AQP) were a huge deal, but not common. At UPS, they were more than willing to give a pilot whatever training they needed. That was a "standing hallmark" of their program. When someone was going to upgrade, which was where the most problems were (even though a low number), the problem was usually working with the new glass cockpit. Changes they had made had reflected that it had helped, with the integration of TEM (threat and error management), though a small number have not passed. He did not remember the exact "bust rate" for UPS pilots, though he got a copy of all busts, but said the number was small, "maybe ten a year."

He said the FAA was made aware of when a pilot entered into "special tracking" under AQP, and they received reports on those pilots. It was very unusual for someone to go in to training and not do well, but some people go into special training and still did not do well. A pilot leaving the company because of a bust was a pretty rare occasion. It was usually because someone was doing something they were not supposed to be doing.

When he would see a 709 check ride, it was usually because of a "conception issue," not a skill issue. He estimated that the FAA conducted about five 709 rides a year. The most recent one just completed was on a captain who had been doing some maintenance on an airplane that he was not supposed to be doing. All of those pilots who received a 709 ride had retained their certificates.

He was not aware of any issues with LIDO, other than in pilot qualification about 2 years ago. For example, when someone did not receive hazmat training and that portion of LIDO did not

pick it up. Some of the LIDO functionality had been an issue early on, like pilot certification record keeping, etc. He did not know of any dispatch issues with LIDO, but had an inspector who was dedicated to dispatch oversight who might better answer those questions

When he was gone for a year from his POI position, he was on the FAA PASS employee contract negotiating team. Bill King filled in for him as POI.

Regarding his involvement with the fatigue program at UPS, he said there was a new rule covering duty times, and cargo carriers like UPS were exempt from it. For fatigue risk management, UPS had a risk management plan attached to the OpSpecs. Passenger airlines flew several flights a day, cargo flights were typically out and backs and if international they had a day layover, so the need for the rule was different between passenger and cargo operations

He was briefed on fatigue issues at UPS, and those topics could come up in quarterly briefings with the airline, but generally they did not. It was not brought up very often. If they got something regarding a fatigue call, it would typically come in via a hotline complaint, and it would typically talk about the duty day. They got two calls in 7 years. He recalled a trip from SDF to SJU and they did not make a necessary flight plan change; there was an enforcement action to go along with that. He said he had received no concerns regarding scheduling issues at the airline.

He did not know if anyone from his office was involved in the CRM steering committee at UPS. He was also not aware of any requests from the UPS A300 training department to change the 1000 foot callout to a "stable" callout.

Regarding the hotline, he said it had received about two calls in 7 years regarding fatigue. Basically those calls could come from anywhere and mostly came from an individual. This hotline was an FAA hotline, not a UPS hotline.

His schedule and workload did not permit him to sit in on any training events at UPS. The last changes to procedures made at UPS involved a "bad habit" of pilots pushing the power up on takeoff and getting the warning horn for flaps not set. This was a fleet wide issue. He sent a letter to UPS and asked that they set flaps during pushback, and that procedural change solved the problem.

Since the accident, he had the opportunity to look at the BHM chart, and he asked if the airport, chart, OpSpec, and crew were legal, and the answer he received was yes. He asked Bob Clark.

He characterized his workload as "pretty high" but it stayed that way. The furlough did have an effect on the oversight of the airline, as did the budget issues with the government. In August, they budgeted the ATOS oversight elements for the upcoming year and were currently polishing up the end of the year available funding. He said they were having budget issues ensuring oversight items were being funded. While there had not been an increase in non-resourced oversight items, there had been an increase in partially resourced items. It was more extreme in the January to March time frame. They were operating with 30-40% less funding than what they requested. ATOS was a program set up to address risk. The high risk items were getting put off

because of the lack of funds. He said "every high risk item becomes an emergency when it keeps getting put off."

He thought it took about 24 months for changes implemented to run smoothly.

He did not know the accident crew.

He said it was difficult to characterize the IPA/UPS relationship since he did not have much interaction with the union. The current IPA president was very nice. Between the company and the union, it was his impression that IPA and UPS got along well.

The interview concluded at 1435.

### 27.0 Interviewee: Robert Clark, FAA, UPS A300 Aircrew Program Manager

**Date: December 4, 2013**
**Location: FAA CMO; Louisville, KY**
**Time: 1455 EST**
**Present: David Lawrence, Katherine Wilson – NTSB; Larry Ashby – UPS; Drew Middleton – IPA; Normand Bissonnette – FAA**

Capt. Clark was represented by Brooke Lewis, FAA General Counsel, via phone.

During the interview, Capt. Clark stated the following:

His full name was Robert Nelson Clark II and he was 72 years old. He was the aircrew program manager (APM) for the A300 on the UPS certificate. His aviation career prior to the FAA included 33 years with Piedmont Airlines and US Airways and 7 years as the chief pilot of Sun World Airlines. He had been at the FAA almost 12 years, and had been an APM for 7-8 years, all on the A300. He was typed on the A300 and received his training at UPS in SDF about 9 years ago, before he became the APM. He had no flight time on the A300. He did not fly currently.

The A300 APM prior to him was Greg Moore, who was now an MD11 check airman at UPS. Capt. Clark's boss was Larry Ortkiese. Capt. Clark was assisted by Pat Pauley who was the assistant APM and had been for 5-6 years.

His roles and responsibilities as APM were oversight of the A300 and all of the manuals, the APD program and check airmen, and ATOS. The tools he used to perform his job were his expertise and inspections. He went through the same school as the pilots. He also gave checks and had to go into facilities and do inspections there. He had to stay qualified on the airplane for his job and he went through recurrent training every year. He attended training with the instructors. They were on a 12 month cycle and he last attended training in September 2013. He attended training with the UPS chief pilot and fleet manager. He used the 8900 as guidance to do job. He also worked through UPS from their AQP manuals.

He learned about the accident after receiving a call while driving to a simulator. He did not remember who called him but it was someone from the CMO office, maybe one of the supervisors. After the call he came right to the office. They then went to UPS and everything had been locked down. UPS gave him a brief description of what happened. There was no emergency action plan activated from the CMO's end because there was nothing they could do at that time.

He did not know the accident crew. Mr. Pauley knew the captain. He saw them talking probably 3 weeks before the accident. He thought they might have had a flight together.

He reviewed the accident crew's records in SPAS (safety performance analysis system). As far as the crew, he did not see anything out of the ordinary. He recalled the captain having an event when taxiing out and departing the pavement. They tried to get as much information as they could. They also looked at flight tracker but they were just speculating.

He had looked at the approach plates for BHM LOC 18 and saw that flight at night was not authorized. Jeppesen had changed that. If he was flying in there and saw that, he would not have shot the approach. He might have gotten some guidance. He did not think the accident crew was legal to fly the approach. He did not know of any chart NOTAMS. The only thing he saw regarding the airport was that they had a lot of unstable approaches, and thought that was on the 10-10 page. He had never looked at BHM before and had never flown in there. FOQA data showed unstable approaches, for example at ABQ, but he did not recall BHM being on there but it could have been. There were a couple of other airports.

He did go out on line checks and had done some type rides before. He did a line check whenever he could. He also went out every 24 months and did checks on check airmen. UPS had 37 check airman on the A300 and 6 APDs. A check airman had to be observed every 24 months. He thought there was one APM on the UPS certificate that left and went to the B767 so it was hard for Mr. Pauley and him to get everyone done in 24 months. There were some check airmen now that he could not observe so they were inactive. They had 81-18 that they could use but Larry Ortkeise told him after the accident he wanted them to do all of the checks. There were maybe 1 or 2 check airmen that were not qualified. He was over at the simulator as much as he could be there.

Asked about his workload, he said between meetings and trying to get out and fly, they had to do their surveillance, that which was almost impossible. He thought he and Mr. Pauley had done maybe 19 flights this year because of budget constraints. He liked to get over to UPS a couple times a week but that was not always possible because of meetings. He had ATOS and EPIs. He tried to get out there as much as possible. He related his workload to other fleets at UPS. The MD11 had 34 airplanes and 4 APMs, and the B767 had 4 APMs. The A300 had 52 airplanes and only 2 APMs.

An occurrence was not a bad thing, such as a bird strike, an airplane off the taxiway, or a rejected takeoff, and they maybe had 30 some occurrences in 2013 on the A300. If an occurrence was maintenance related, he would pass it off to different department. If it was pilot related, he and Mr. Pauley had to fill out the paperwork. An EPI might say to take three flights in that quarter and Mr. Pauley would have 3-4 flights in that quarter. It all depended on what they wanted them

to do that surveillance on. Their hands were tied because of sequestration and they did not have money to get out there and fly. They were getting it completed but it was tough.

Under the MOU with UPS, it was not costing the government a dime to train FAA pilots. UPS would train FAA pilots for free but the government would send the pilots somewhere else and pay for the training. Larry Ortkeise was trying to get resources for the APMs. Capt. Clark did not want another accident because they could not get out and do surveillance. Budget constraints, without a doubt in his mind, were affecting their ability to do surveillance.

He loved working with UPS. The chief pilot and fleet manager were great people to work for. He could make suggestions and they all tried to work together. He never had a problem with UPS.

He interacted with line crews when he flew with them. All the pilots he had flown with had been great. He was not saying they were all perfect but overall, UPS did an excellent job.

Asked what changes had been recently made to procedures at UPS, he said they now had a checklist item stating to sign off on the logbook There was nothing major to change. When they had problems, it was always put into training, such as when pilots were overshooting final due to strong winds that was incorporated into training. That corrected the problem.

Pending changes to procedures was a new go around procedure. There were a lot of issues in industry when using go around thrust so instead the change was to use climb thrust instead of go around thrust.

He thought they had talked about doing some FMA callouts but the change had not been made. He did not recall any pending changes to the 1000 foot call. He said pilots knew what they had to do for a stabilized approach. With the FMA, pilots would push a button and then not look at the FMA to make sure it happened.

Regarding recommendations made since the accident, he thought for 2014 they were stressing more on CRM. UPS did a great job on CRM and it improved more every year. But they might need to go back and change it. UPS taught CRM in ground school and the simulators; pilots were great. They looked at the grades to see if there were any problems, even on line checks. That information fed changes to training along with FOQA, event reports, etc.

He was not on the ASAP ERC but Phil Daugherty was.

They still got stabilized approach trend data from FOQA. In 2013, they stressed V1 cuts in the simulator because pilots were not putting enough rudder in. He could not think of other trends from FOQA.

In the simulator and on the line, he had seen a couple of pilots fly a vertical speed versus localizer approaches. It was a debrief item he would discuss with them. Pilots would work themselves to death trying to use vertical speed. The AOM even said that profile mode was the preferred method. He read that 65% of accidents were the result of unstablized approaches and many were due to using vertical speed or doing a dive and drive.

He had seen a pilot use vertical speed for an approach on the line about 6-8 months ago. He did not know where they were flying in to, he just remembered saying something after. He did not recall the last time he had seen it in the simulator. He thought sometimes pilots were afraid to do a profile approach. It was a very small group of pilots that did vertical speed. He had pilots set up the profile and then they did not activate the final approach or profile and then could not figure out why it was not working. He never saw a pilot start in profile mode and then go to vertical speed. If a pilot read the checklist it told them what to do. If a pilot set up the approach, activated final, cleaned up the turn and hit profile, it worked fine. He saw most people do profile. He did not think it was a systemic problem.

Pilots did not see non-precision approaches often. They maintained proficiency on them in CQ every year. Most approaches were ILS approaches. They trained CAT I, II and III approaches also and a pilot might go a year without seeing one. A pilot might do one or two non-precision approaches a year.

He thought everyone understood that if they read the checklist there was no problem. If a pilot followed the checklist he did not think there was a problem.

Pilots received CFIT and TCAS training in CQ every year. They also received training on the line and during SPOT training. He could not remember if one scenario was on an approach. He thought there was one CFIT scenario going into ABQ last year. A pilot had six CFIT warnings; if you got any one of them you got out of there. In IMC, you had to get out.

He thought they got an upgrade to the A300 a couple of years ago for the FMC.

Per the AQP manual, a pilot could request additional training. He could not remember if a pilot had removed themselves from training, maybe one or two pilots if they had problems at home but there was no formal process to tell him.

He was made aware of pilots in special tracking. He thought there were six pilots in special tracking right now. It could be because of a problem in the simulator or training. He was not sure if pilots asked to go in to special tracking. A check airman could give up to 2 hours of extra training and then the chief pilot could extend that. Then a pilot usually went to special tracking. If a pilot messed something up out on the line, they could put them in special tracking.

He had not seen any issues with accuracy of paperwork.

Regarding the labor-management relationship at UPS, he had them over to the FAA CMO quite a bit to talk about problems. He did not think there were any problems and everyone got along. They tried to work together and discuss any problems that the FAA might see.

He was not involved in any fatigue programs at UPS. He had not seen any problems with fatigue at UPS. He knew some pilots had removed themselves from a flight because of fatigue. He had not received any reports on fatigue.

The FAA was invited to business planning meetings at UPS, and they tried to attend, especially FOQA meetings. There were no discussions in those meetings about fatigue.

He did not recall fatigue being discussed during CQ training.

CRM at UPS was very good and they recently put together Max Threat. During his CQ they spent half a day just on CRM. CRM was implemented into all of their training, even for regular pilots. CRM was presented in ground school and it was graded in the simulator. "We are really big on CRM." They wanted pilots to get along and the captain set the tone in the cockpit and tried to make the FO at ease. They would say "I'll correct you, you correct me." We had films showing different scenarios." They were very good. UPS had put together a good CRM program. They discussed CRM constantly. He clarified that when he said "we" he meant UPS and that he was a part of the "UPS family."

They did have training issues but they talked a lot.

He never heard anyone brief fatigue as a threat prior to a flight.

He did sit in on their training courses and had sat in just a couple weeks ago. He would sit in portions of it, but had sat in during the whole thing. It depended upon his schedule.

He interacted at UPS with all of his APDs and check airmen. If they had training issues, he would talk to them about that. He was over there quite often.

When observing on the line, pilots discussed schedules. He thought he had always seen that and he used to gripe about schedules when he was flying. It might be because of a long day. But he did not hear pilots talk about fatigue.

Asked whether he thought fatigue was a concern at UPS, he said when you see pilots at 0300 they looked tired. Fatigue was always a concern.

He thought the safety culture at UPS was "fine." They did not have any problems. There were always safety improvements that could be made and it was an ongoing process.

Since the accident, he did as much surveillance as he could do, but he and Mr. Pauley could only do so much. Currently, surveillance in the simulator was all he could do. Asked about additional oversight since the accident, he said they did as much as they could do. He and Mr. Pauley could only do so much. He was trying to make sure they did not have any issues and he had not seen any issues out there. He was asking "are we doing something wrong out there?"

Since the accident he was trying to do more surveillance of UPS but he had not been directed by anyone to do that.

There were no good out and backs anymore. He would go out at 0300 to do his surveillance. He would like to surveil some flights in the daylight but if it was at 0300 that was what he had to do.

He had done a flight into the sort and back out and recently did a double leg out and a double leg back in that same night. During that trip, he thought the crew was very alert.

The interview ended at 1602.

### 28.0 Interviewee: Mike Betson, UPS, Air Division Manager Crew Services

**Date: December 5, 2013**
**Location: UPS Training Center; Louisville, KY**
**Time: 0813 EST**
**Present: David Lawrence, Katherine Wilson – NTSB; Larry Ashby – UPS; Drew Middleton – IPA; Normand Bissonnette – FAA**

Mr. Betson declined representation.

During the interview, Mr. Betson stated the following:

His name was Michael Betson, and he was the division manager in charge of crew services and the industrial engineering department. He had been in the crew resources position for four and a half years, and on the industrial engineering side since July 2012. He had been with UPS for over 27 years. He started in PHL in 1986 while in college, the traditional way with UPS. Over time he had accepted increasing job responsibilities. He was a supervisor for UPS in 1989 over ramp operations and load planning. He came to SDF in 1994 to work on a special assignment in the contingency department for 6 months, and then went back to PHL and transferred into the industrial engineering department and was a supervisor until 1999. He was then promoted to section leader responsible for hub and packing operations and planning. In 2004 he was asked to come back to SDF for a promotion to the industrial engineering manager, and in 2009 he assumed his current responsibilities.

His primary role as crew resources division manager was to build safe lines and pairings and to make sure they had qualified crew members to staff those pairings. On the industrial engineering side, he was responsible for the LIDO front office, performance engineering, and industrial engineering itself, like square foot requirements, gateway requirements and manpower.

The structure of the department included about 114 people that worked in combination of management and technicians. They had about 6 managers, 17 supervisors, and the balance were technicians. They defined it as the entire crew experience, from manpower planning to quality assurance to making sure they were paying pilots correctly They took care of the right number of people for their operations, built the lines/pairings, transitioned the plan into their daily ops level, and made sure there were qualified people to operate the trips.

When a crewmember called in sick, the technician would answer the phone and the crewmember would give his employee ID number. The technician would record the sick call and then ask basic questions to determine how long the crewmember would be sick in order to cover the open trip. The technician would then document the event in the exception reporting system and on the turnover sheet that went to various managers at 0700 each day. He had listened to a variety of

sick calls, and it was his impression that the schedulers did not pressure the pilots to fly trips but only asked what was needed to cover the trip.

Regarding the process for fatigue calls, he said they had a "no fault fatigue policy at UPS." When a crewmember called in fatigued, the scheduler would ask three basic questions; if the pilot was unfit for duty, if there was anything UPS could have done to prevent it (like a problem with the hotel or something that could be prevented for the next crewmember), and when the crewmember will be fit for duty again (to make sure they are covering the open trips). After the call it was documented in the exceptions report, then he would tell the FSAG who would take over and make contact directly with the crewmember. They received about 100 fatigue calls this year, and he heard the tapes on them, and there was no pressure from the scheduler. Fatigue calls were trending down. There were more than 250 in 2011, and each year since it had been significantly less. Based on the number of operations at UPS each year, the number of fatigue calls was fairly low. When asked why the trend was lower, he said to some degree they looked at areas of concern, anything that raised itself to a moderate risk level they would look to mitigate it, and the professionalism of the pilot group came into play.

He could become involved in changing a pairing, but no recent schedule changes to the A300 came to mind. They had three moderate level risk events they were in the process of mitigating, and one may have been on an equipment change involving the A300. They would have those mitigated prior to the next bid. There were other pairings (ANC-ONT-OAK) on the MD11 and they initially thought it was a hotel issue because the Occupy Oakland initiative was happening in a nearby park. They worked with the hotel to move the crews to other rooms. However, after the initiative dissipated, they still received some concerns. They looked at how the pairing was structured and recognized it was placed on the backside of an international trip, had their management pilots fly the line, and now placed that pairing as a standalone trip.

Regarding pairing changes, they had a lot of input, particularly on pairings with a moderate risk. The FSAG and the director of operations took charge to figure out how to change the pairing and mitigate the risk. Several other points of input were from the scheduling advisory board that the IPA also participated in, event reports and fatigue reports, and UPS had an open door policy so any employee could talk to a management person regarding safety related to pairings. That had been one of their successes as a company in general to give people the opportunity to talk about what was on their mind.

He was part of the scheduling advisory board, and he had his planning manager, planning supervisor, industrial engineering manager, and industrial engineering technician on it as well. A number of representatives from IPA (Harry Trefes IPA at Large, Dennis Madden IPA at Large, Andy Koch, Carol Nicholson and Pam Sanders) were also involved. The scheduling advisory board met once per bid period, prior to the new bid period starting.

He did no look at fleet specific trends on fatigue; that was conducted by the FSAG. He believed the A300 was on the top for fatigue issues, but was not sure, and the FSAG would look at that.

All calls into "the core" were recorded. Last year they put together customer service relationship training and all employees in his division went to training to professionally handle the calls that

came in. The feedback that came in was very positive and the relationship in the last several years had not been better than it was now.

A turnover report was a snap shot of their reserve availability, and also had exceptions in the system such as delays conducted by scheduling, a list of management pilots flying in the system and sick and fatigue information that had accumulated during the day. They used that information in two ways; fatigue was funneled through the FSAG, and sick was used to keep the chief pilot and assistant chief pilot aware of activity in the system, not from a punitive standpoint but to ensure that a pilot who may be dealing with a life event was provided support, and also to be able to forecast their reserve needs.

Holidays typically had a spike in sick calls. They had on average 12-14 per day, and that could spike up to 20-30 calls per day during the holiday season. Fatigue calls were fairly consistent throughout the year.

At 0700 the turnover report went up to managers, and they kept a file of that data and used it to forecast reserve coverage. They did not chase individual crewmembers on a sick event. The chief pilots looked at multiple sick calls to identify trends. Files were retained under a records retention policy, but he was not sure how long they kept those. From time to time, they would have pilots call schedulers with a complaint about the schedules. If the call was due to a delay, they would manage it as it came in; if it was a more significant concern, they would pass it along to the FSAG. They might get a negative response from a reserve pilot but generally the relationship was very good. When they got negative feedback from the scheduling advisory board, they took a look at making changes. Sometimes the business dictated that they carry more reserves at night.

He characterized the relationship between schedulers and line pilot as conversational.

When they got feedback from the scheduling advisory board, they would look at the concerns. In some cases they could fix those concerns and sometimes they could not.

The process for a pilot to formalize concerns was through an event report, and every event report was expected to be closed within 30 days. Crewmembers could also file a fatigue report, or could voice a concern through their chief pilot or assistant chief pilot, any management person, or scheduling representatives who were union members.

Regarding the “no fault fatigue policy” he would have to check the FOM to see if it was written there, but it certainly was understood.

He did not know the accident crew.

UPS built the pairings within his planning group; ultimately it was his responsibility. They built pairings and shared the information with the IPA. IPA had a copy of their planning software, which was a read only to see what they were doing. IPA was not active in the build process for the pairings but could make recommendations. The vast majority of changes recommended by the IPA were implemented.

They used the AD-OPT program to build the pairings.

He was not personally involved in any grievance process, but did get reports. IPA grieved every bid package they put out. They were general grievances, nothing specific. The hotel committee had an IPA member on the committee and signed off on the acceptability of the hotel.

The scheduling advisory board meetings discussed a "clearing house on a variety of topics," like upcoming bids, city purity, and how they utilized "hot crews" in conjunction with reserve crews' there were typically 5-7 items on the agenda. They also looked at any new pairings, and the contract provided IPA with the opportunity to deny flying of new pairings, that happened all the time.

In general they had a first in first out reserve system. Regarding time balancing of the reserves, they had a time requirement for how long a pilot had to be back in base before being called back out, and that was in the contract.

Their schedulers came from a variety of places, with the vast majority former part-time supervisors. The average experience was 10 years or more. Back in 2005 or 2006, they wanted to develop a professional career path for schedulers. They invested a lot of money and training and made the job a premier job at UPS. The salary structure for schedulers was the highest paid non-certificated employees in the company outside of management. There was good retention of schedulers with little turnover.

When they had furloughed pilots back in 2010, he wanted to make sure the schedulers were put in the best position to help the crews because of the natural divide that occurred because of that furlough. The schedulers went through the customer services training program. Overall he characterized it as a success.

A300 had not necessarily received the most number of complaints on the pilot's schedules. The A300 averaged 38 block hours per 28-day pay period. The minimum guarantee per pay period was 75 credit hours pay. The block hours per crewmember were actually declining. The A300 was a very stable fleet, and the typical A300 line was 12.5 days on and 15.5 to 16 days off. The A300 was primarily a night time flyer but the contractual agreement with IPA stated that anyone who flew in the "early window" was guaranteed 8 hours of off time to get good, consistent rest. Eighty percent of A300 lines were for a week on and a week off. The A300 was largely domestic flying, and it produced good lines. He had not seen an increase in the number of legs flying into the sort. Typically the A300 lines were 2-3 landings per night. The average duty time on the A300 was less than 8 hours, which provided at least 16 hours of rest. They planned to see a decrease in block hours on the A300 in the future as four A300s were to be set up as "unassigned spares."

They had the Dr. Hursh safety fast model, but they did not run all the pairings through that model. The contract with the union also provided an additional layer of safety as it was more restrictive than 14 CFR Part 121 requirements. They also built buffers to make sure they were

not infringing on CFRs and the contract. The safety fast model was one of the tools they used to identify risk and help mitigate a situation.

There was a time when IPA was involved in the construction of lines, but the union decided to vacate that role, and walked away from the process which left the company with the impression that they were building safe and compliant lines. Since then the union has not been involved in the building of pairings. The reason the IPA walked away had to do with some disagreement, but it was before his time.

Regarding the increased length of A300 trips mentioned by others interviewed, he said some times they were seeing weekend layovers that extended the pairing, but block hours were declining overall.

He looked at the accident pairing, and considered it "fairly typical" for the A300. The plan for that particular pairing was for three landings with ample rest opportunities, and it had sufficient time on the ground for the crew to get rest in the sleep rooms. The pairing modeled very well, and there was evidence the crew used the sleep room since the doors were opened after the event, and the sheets and blankets looked as if they had been used.

They ran the accident pairing through the Dr. Hursh model both as flown and planned, both the FO and captain's total pairing. The FSAG did that review.

There was no requirement for them to attempt to build pairings under Part 117 guidelines, and they did not do it. They did a Part 117 comparison of the accident pairing to see if it would have been legal under those rules, and up to the point it was flown it would have complied with Part 117, but after the Thursday or Friday night operation it would not have been due to the consecutive nights of operations. They did not typically do Part 117 comparisons on pairings.

The interview concluded at 0908.

### 29.0 Interviewee: Peter Laurentz, UPS, Flight Standards and Training Manager

**Date: December 5, 2013**
**Location: UPS Training Center; Louisville, KY**
**Time: 0914 EST**
**Present: David Lawrence, Katherine Wilson – NTSB; Larry Ashby – UPS; Drew Middleton – IPA; Normand Bissonnette – FAA**

Capt. Laurentz declined representation.

During the interview, Capt. Laurentz stated the following:

When asked to confirm if he had reviewed the accident crew's training records, he said he never reviewed the actual hard copies of the records. He was briefed on both pilot's backgrounds, and said neither was in special tracking, and neither had failed a training event, like LOE or a line

check. The captain had bid an upgrade and elected not to continue that training, he thought twice, but he was not familiar with the details.

Capt. Laurentz was shown a copy of a letter from 2002 describing the accident captain's second voluntary withdrawal from B757 upgrade training, and he said he vaguely recalled the event. Capt. Laurentz said he was probably the B727 standards manager back in 2002, or possibly working with labor.

As it relates to the training withdrawal, Capt. Laurentz thought the letter referred to the second withdrawal from training, and the first withdrawal was in 2000. He thought the accident captain requested to be pulled out prior to any checking event, but he did not know exactly why. He could only assume the accident captain had some challenges during training, but he truly did not know the reason.

He said it was unusual in general for a pilot to voluntarily withdraw from upgrade training twice. He did not know of anyone else who had attempted to upgrade twice and withdrawn both times. If that were to occur presently under AQP, it would have "most likely" triggered placing the pilot in special tracking. It would have hit the prescribed list of required events for special tracking, but it could fall under the fleet manager's decision. It could be for anything, to include something in the pilot's personal life.

He said he was familiar with the Airbus flight operations briefing notes that were distributed by the manufacturer, and the fleet training manager would review those notes from the manufacturer to see its applicability to their operations. If it applied or added to their practices, they would include it as necessary. If it was not applicable, it would be filed accordingly.

If a pilot wished to upgrade to captain, when the bid went out and a vacancy was available based on the pilot's seniority he would be awarded the upgrade. The only time that a past performance in training came into consideration would be a training failure, which contractually there was some language that may prevent the pilot from going through training for a certain period of time after the failure.

He had been briefed on the CLT event for the accident captain involving an incident where the captain taxied off the pavement. Capt. Laurentz thought he was the director of operations at that time. He recalled that the captain misjudged the turn and got a gear in the mud. He did not recall what the actions of the company were related to that specific event, but the typical methodology would have been to have the pilot removed from the line and provided with additional training in the simulator and related to geometry of the aircraft and taxi operations. That would be the standard protocol.

Reviews were being considered by several departments since the accident. They reached out to JetBlue on their pilot monitoring techniques related to training and took some of their best practices and added them to 2014 CQ training. They deployed a CRM advisory group, four management supervisors and four IPA instructors. Two individuals were looking at human factors/CRM to see if there were any gaps and any best practices that they could learn from. The other was an automation policy they were reviewing. These were three of the things in the

industry that were critical to the safe operation of the airplane, and they were looking at ways they could improve on them. They are continually looking at all things that could improve their training. The report was due back to him in January and would map out the scope and objective of what they were trying to accomplish. Regarding the JetBlue pilot monitoring presentations they were incorporating, they were looking at new ways to present pilot monitoring in training. He was also going to be involved in the FAA training ARC. He said they were trying not to miss an opportunities for improvement.

The interview concluded at 0931.