

Attachment 1

to Operations / Human Performance Group Factual Report

OPS10IA001

INTERVIEW SUMMARIES

Interview Summaries

Interview: First Officer Leigh Allison Meyers – Delta Airlines (DAL)

Date: October 28, 2009

Location: via telephone

Time: 1040 EDT

Present: David Helson, Katherine Wilson, David Lawrence - National Transportation Safety Board (NTSB); Henry (Hank) Sardelli – Delta Airlines; Warren Bildstein – Airline Pilots Association (ALPA); Philip (Mike) McKinney – Federal Aviation Administration (FAA)

First Officer Meyers was represented by Mr. Bill Elliott – ALPA.

During the interview, First Officer (FO) Meyers stated the following information:

She was 38 years old. She had been a first officer with Delta Airlines since July 2000 and was furloughed for about 2.5 years during that time. She had logged over 8,000 hours total time and about 1,300 to 1,500 hours in the Boeing 767. She began flying the 767 about 2 1/2 years ago. She was based out of Atlanta (ATL) and had been since 2001. She went to University of North Dakota and graduated from the Aviation program. After graduation she worked on her ratings and flight time. She then worked for Great Lakes Aviation for about 3 1/2 years and then worked at ATA for about 1 1/2 years prior to being hired by Delta Airlines.

FO Meyers was asked to describe the events of the incident flight. She began at the crew pick up in Rio. She said all pilots were early and they had coffee while waiting for the flight attendants (FAs). They took the bus to the airport and had an uneventful ride. When they got to the airport, they had to wait a few minutes for the airplane to arrive. She was the relief pilot and did the preflight duties as required while the captains briefed the flight. Before pushback, Captain (CA) Kelley stepped out of the cockpit to use the lavatory where he got sick. When he returned, CA Kelley assured them that he was okay and said he thought he ate something bad that disagreed with him. He felt better and was okay to continue with the flight. The flight taxied, took off, and did the climb out. When they reached their cruising altitude, she said they configured the crew rest breaks. CA Stephens offered the first break to CA Kelley, although normally the relief pilot took the first break.

FO Meyers said that everything was normal until she and CA Stephens called back to ask the FA to wake CA Kelley up so that CA Stephens could take a break. The flight crew was informed that CA Kelley did not feel well. They decided to cycle for bathroom breaks and let CA Kelley rest more. About half way through what would have been CA Stephens' break, the FA informed them that CA Kelley was not feeling well. The FA asked if they needed anything. The FA came up to sit with the flight deck crew as an extra body and set of eyes. The FA found a doctor on board the flight who helped and the FAs blocked a bathroom for CA Kelley. With about 2 1/2 -3 hours left in flight, the flight crew talked with the FAs who conferred with CA Kelley and the doctor, and said CA Kelley was stable and could make it to ATL. CA Stephens called dispatch to advise them of a medical emergency and he wanted medical personnel to meet them at the gate in ATL. He put himself as captain of the flight. The flight deck crew briefly discussed Miami and Fort Lauderdale for a divert but there did not seem to be a reason to divert so they continued

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on. The flight crew briefed early for a visual approach in to ATL. When the flight got to the Miami airspace, it was cleared direct to ATL. They briefed 27L which was the customary runway when landing to the west. Approach advised the flight crew that they would be landing on 26R so they pulled out their books, changed the FMS (flight management system), and briefed an approach to 26R. When about 15 miles in, the flight was cleared direct to ANVAL, which was a fix on the 27L ILS (instrument landing system). They queried the controller who asked them if they wanted 27L. Because they would be parking at the E3 gate, 27L was a shorter taxi ride and they took it. They re-briefed, re-bugged, and put the runway in the FMS. Shortly after that, ATC cleared the flight to DEPOT and cleared them for the visual to 27L. The flight crew was next asked if they wanted 27R and the crew accepted the clearance. The flight was cleared for a visual 27R and cleared to land. CA Stephens started the side step maneuver around DEPOT. The captain asked her to put in the ILS frequency so he would have a backup reference. She went heads down and was conferring with the Jeppesen chart but it would not come up. The captain confirmed he was visually on the VASI (visual approach path indicator) so she kept trying to bring up the needles. She said hers still was not coming up and CA Stephens cycled the flight director. The 500 foot checks came. She glanced out and saw they were on glide path with VASI. She went back inside to figure out why she was not getting guidance. She could not recall when she looked up; it was close to the end. She thought it was in the flare or shortly before the flare when the lights hit the pavement. She had only landed on 27R once in the daytime. She thought it did not look right but she was not sure. At touchdown, CA Stephens stated they were on the taxiway. The tower cleared the flight to taxi to the ramp. They completed the after landing checklist and pulled into the ramp where EMS met the flight. The flight crew was advised to call the FAA. They finished the shut down and went back to help CA Kelley and that was when CA Stephens made the phone call to the tower.

Asked if she or CA Stephens assessed CA Kelley's condition prior to the flight and after he got sick in the bathroom, she said that CA Kelley said he was just fine and she did not have any concerns. She said he was a line check airman and there were two captains on board. CA Kelley said this had happened to him before and he said he was fine.

FO Meyers was in the jumpseat/relief seat, CA Stephens was in the left seat, and CA Kelley was in the right seat.

The scheduled rest rotation normally began approximately 30 minutes into the flight, at the top of climb. There was a designated business class seat in the cabin for the break.

FO Meyers said that the B Coordinator FA had the first break and when he got up from his break, he took it upon himself to determine if there was a doctor on board. The FA told the flight crew of his actions.

FO Meyers was asked how the company was informed of the medical emergency. She said that CA Stephens called their dispatcher and spoke with him. He told the dispatcher that CA Kelley was ill and they would like medics to meet them upon landing. CA Stephens also changed the captain of record on the flight. The dispatcher confirmed this call with an ACARS message.

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The flight crew did not contact the medical group at UPMC (University of Pittsburgh Medical Center) that Delta Airlines had a contract with. She did not think that dispatch contacted the medical group either.

The flight crew did not directly inform ATC (air traffic control) of the medical emergency. She said that CA Stephens felt that by contacting the dispatcher, the FAA would be contacted by them.

FO Meyers could not say what the company policy or procedure was for dealing with a medical emergency. She never heard that they needed to call UPMC. She said they had a medical professional on board and from what they were told by the FA, CA Kelley was stable and “it was okay”.

Only the cabin crew interacted with the medical professional on board. The B Coordinator FA relayed to the flight crew that the doctor was “administering liquids and such” to CA Kelley. The FA said the doctor and CA Kelley felt that he was stable enough to continue to ATL and that it was not necessary to divert to Miami.

Regarding the decision to continue to ATL, she and CA Stephens discussed with the B coordinator how far out they were from Miami and ATL. The flight was 1 hour from MIA and 2.5 hours from ATL. The FA informed the flight crew that CA Kelley could make it to ATL. Dispatch would have medics meet the flight in ATL. She suggested to CA Stephens if they did divert that Miami would be better than Fort Lauderdale because it had better facilities.

She did not really have any concerns about the rest of the crew getting ill.

The flight crew did not receive any information from ATC that they were aware of the medical situation except that the flight was cleared direct to ATL from so far away.

FO Meyers said that CA Stephens briefed their highest threat for the descent and approach as fatigue. She said they briefed their highest threat on every approach briefing. She said they started everything early and were trying to get all of their administrative duties out of the way. There were normally three pilots in the cockpit and they were trying to stay ahead of the game rather than getting behind because they had been up all evening. She said once they had identified the highest risk, they did not discuss it further and did not discuss how to deal with the risk of fatigue.

Asked if there were any limitations for conducting a visual approach, FO Meyers said they were approved as long as the appropriate visual conditions existed. ILS or other backups were to be used. FO Meyers was asked what items were covered during a visual approach brief. She said she could not think of the last time she did a visual approach that was not backed up by the ILS. She said the altitude should be bugged, FMS and inbound course selected. If there was a published ILS for the runway, the flight crew would select that in the FMS. In this case since they were initially landing on runway 27L, they selected the ILS for 27L in the FMS.

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Regarding company guidance for a side step approach, she said the flight had to be in normal parameters, in the landing configuration, and she thought above 1000’.

She said she thought she may have landed on runway 27R one time before, during the day. She did not have any concerns about landing on 27R.

The first thing that FO Meyers saw when approaching the airport was the terminal area. She said they had a visual back up by the ILS for 27L with the runway in sight.

When the flight was cleared for the side step, she saw runway 27L but then went heads down to set up the ILS frequency for 27R. When cleared for the side step, it was around DEPOT and the airplane was fully configured for landing – they were on speed, on glide slope and the gear and flaps were down. On the approach to 27R, she never got the ILS up.

When the flight crew got the 500 foot call, they looked for whether they were on speed and on glide path, fully configured and at what back up information they had.

Asked what traffic information they received from ATC, she said “nothing” from ATC. They cleared them for side step, “cleared visual, 27R cleared to land”. She did not recall ATC providing any information about the condition of navigation aids or lighting.

FO Meyers said she first realized they were on a taxiway at “about the same time CA Stephens did”. She said the wheels had touched down already. Asked where they touched down, she did not know but said the PAPI indications were always on the visual glide path.

ATC did not acknowledge that they landed on a taxiway and cleared the flight to taxi to the ramp. They received the FAA number to call from ramp control. She was present with CA Stephens made the call. She could only hear one side of the conversation and heard CA Stephens say they landed on a taxiway, he understood and okay. After the call, he told her that the person he spoke to said they could not believe what they were seeing and that there would be a pending investigation.

She said the flight crew did not receive any warnings or annunciations during the approach and landing.

The airplane was not equipped with EFBs (electronic flight bags) or a moving map display.

FO Meyers was asked what training she received for medical emergencies. She could not remember specifically and said maybe she received it in initial or recurrent CDs but did not recall. She said everything was pretty much “reference the FOM”. Regarding training for medical emergencies in the simulator, she said not that she could recall. She did not recall any training for incapacitated crew members.

She said they received training for visual approaches when checking out in the airplane and she thought also in every recurrent. The training was done in the simulator. She did not recall what

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airports were used in training and said it was “whatever airports they were using for training that year”. She did not think it was the same airports every time.

Asked what training or guidance she received for relief crewmembers, she said “not a whole lot”. She said for managing crew breaks, she would subtract from the total flight time how much time before the captain would want the pilots back in the cockpit before landing and 30 minutes from the start of the flight then divide that by three. Customarily the relief pilot would take the first break, the flying pilot would take the second break, and the pilot monitoring would take the third break.

Asked what guidance or training was received on required procedures and notifications for incapacitated crewmembers or passengers on international flights, she said there was no training but there was some guidance in the FOM which did not apply to this circumstance. Asked why not, she said she did not look it up specifically but CA Stephens did and he said he did not see anything there that applied.

After the incident, FO Meyers filled out an ASAP (aviation safety action program) report and a NASA (National Aeronautics and Space Administration) report, and provided a written statement to the NTSB. She was also debriefed by the company on Friday, October 23, 2009, which was required for the ASAP program.

She said her last proficiency check was in April or May 2009 and her next recurrent was scheduled for the Wednesday after the interview. Her last FAA medical was received in April or May 2009 and did not have any limitations, restrictions, or waivers.

The approach into ATL was hand flown by CA Stephens and she believed the auto-throttles were on. The flight director was also on but was not providing guidance.

FO Meyers replaced CA Kelley in the right seat about 30 minutes into the flight.

During the flight she said she “picked” at her dinner, had a handful of Pringles and some M&Ms candy. She did not eat breakfast on the flight.

FO Meyers and CA Stephens did not have any rest periods during the flight. During the second portion of the flight, the B Coordinator FA had arranged for other FAs to sit in the cockpit to have an extra body or set of eyes. For most of the second portion of the flight, the flight crew had the lights on until the descent.

Asked what the flight crew did differently because fatigue was briefed as their highest risk, she said they tried to be set up as early as possible and also put the ILS frequency in for backup.

To alert the FAs of the initial descent, FO Meyers said they would make a PA announcement or call the FAs on the interphone. They would say “Flight Attendants please prepare for arrival.” She said this usually occurred when the third crewmember was coming back from break which was also an indication to the FAs. Asked if they alerted the FAs on the incident flight, she said “I believe so”.

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Regarding whose decision it was for CA Stephens to fly the approach, she said CA Stephens was the flying pilot when they took off and he stayed as the flying pilot throughout the flight.

Asked if there was any concern about CA Stephens flying the approach although he had been on duty for the entire flight without a rest period, she said the consideration given would have been that they briefed fatigue and had their administrative duties done as early as possible.

Asked if she had any concerns about getting a sidestep to 27R on final approach; she said “not particularly”. She said the approach was not briefed because in a side step maneuver, there was not a lot of time and you were visual at that point. Asked if it was required to be briefed, she said there may be some required briefing but she could not say specifically.

Asked what airport or runway lights she saw on the approach, FO Meyers said she was heads down for almost all of the sidestep other than a glance up and verifying with the captain that he was on the PAPI.

FO Meyers was asked if there was a certain point when one should make the decision to forego any further troubleshooting, and not stay heads down. She said she “could not recall a time when she had ever had to troubleshoot like this so I’m not certain”. She said the ILS had “never not come up” that she could recall.

She did not recall seeing any ground vehicles or other airplanes on the parallel taxiway during the landing or roll out.

She was not given a drug or alcohol screening after the incident.

FO Meyers was asked to describe her activities during the 72 hours prior to the incident. On Friday, October 16, 2009, she awoke about 0700. She went on the computer to try to pick up some flying. She said this trip showed up on the swap board and she picked it up. She packed and organized to leave on the trip that night. She tried to nap but that “did not work so well” because she usually did not nap well and she got a good night’s sleep the previous night. She signed in for the trip at 2005 and they pushed back from the gate about 2200. During the flight she ate part of the crew meal but did not believe she had breakfast. The flight arrived in Rio on Saturday, October 17, and she took the bus to the hotel. The flight crew and FAs met at the hotel and went down to the beach. She took a nap for about 3 hours and “felt okay” when she awoke. She did not set an alarm and woke up when she woke up. The flight crew and FAs met at the bar around 1800 and she had two beers. They went to dinner about 2000 and she had a coke with dinner. After dinner, the captains and she went back to the hotel. She went to bed about 0130-0200 and awoke on Sunday, October 18, about 0700. During the day she studied for recurrent training and went to a market. She napped for about 3-4 hours which she said was “really good” for her. She then got ready for their pick up. She said she felt good from her nap and felt rested. She ate a sandwich within the two hours before pick up. They left the hotel about 1950 which was the start of the crew’s duty time.

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When not working, she needed about 6-8 hours of sleep to feel rested depending on how much exercise she had. She needed more sleep when she exercised.

She did not know if she would characterize herself as a morning or an evening person. She said she did well in the mornings when she was working a lot in the morning, and she did well at night if she was working a lot at night.

Prior to this trip pairing FO Meyers had a couple of days off.

She said the only thing unusual about this trip pairing was that there were two captains on the flight. Typically there were two first officers. If the flight had been over 12 hours, there would have been two relief pilots on board.

She had not been involved in any previous accidents or incidents and had never been disciplined for her performance.

She had not had any major life changes to her health, financial situation or personal life (good or bad) in the 12 months prior to the accident that might have affected her performance.

FO Meyers considered herself to be “pretty healthy”. She said her vision was correctable to 20/20 and she had good hearing. She took a prescription seasonal allergy medication the day before the flight. She said if her allergies were not bothering her, she did not take it. She said there were no limitations to taking the medication when flying.

She did not use tobacco products or illicit drugs. In the 72 hours prior to the flight, she did not take any prescription or non-prescription drugs that might have affected her performance.

The workload during the flight overall was “normal”. She said the workload did not change when CA Kelley became sick because for most of the flight they would only have two crewmembers anyway. There was more workload during the approach and landing because the relief pilot would be getting ATIS and frequencies, and working with the FAs.

There were no problems with the visibility or layout of instruments or radios in the cockpit. There was nothing hindering her view through the cockpit window to the outside.

She felt “normal” during the flight. She said she felt “maybe a little” tired at the end of the flight but felt fine throughout the flight.

Asked what strategies she and CA Stephens used to stay alert on the flight deck, she said for the second half of the flight they had a FA in the cockpit until the A Line FA got up from break. At that time, she needed the FA in the back for service. They also drank coffee, took bathroom breaks and kept the lights on.

She said she did not think there were any external pressures from Delta to continue on duty when a pilot was fatigued.

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She had not flown with CA Stephens before but had flown with CA Kelley in March 2009.

CA Stephens' mood during the flight was "good, fine, professional". She said he was fully proficient; "he's a reserve pilot but seems proficient". He appeared alert. Asked if he appeared tired, she said he was "normal".

Asked what training or guidance pilots received from Delta, she said they were told to live a healthy lifestyle and show up to work rested. She did not recall getting any handouts. Asked about any other guidance, she said "other than showing up for work well rested, not particularly". She was not sure of the consequence for a pilot that called in or cancelled a flight because of not being well rested.

Regarding crew resource management (CRM) training, she said "if there was any, it would be on our recurrent CD, and I can't specifically recall anything". She said she got some CRM training as a new hire. She could not recall if fatigue issues were covered in CRM training. She remembered being taught about threat and error management during classroom recurrent training but she was not sure how many years ago that was. She said it may be included on the training CD but she could not recall.

She said the crew would fill out a Crew Operation Report (COR) if something "odd happens" on a flight.

Break 1214
Resume 1220

FO Meyers was not "particularly concerned" about the fact that the crew had eaten at the same restaurant with CA Kelley for dinner the night before the incident flight. It was not mentioned by any of the crewmembers. She said CA Kelley was "fine" and he did his own thing on the layover.

She thought the scheduled flight plan time from GIG to ATL was 9 hours and 34 minutes. That would have allowed for each crewmember to be on break for 2 hours and 50 minutes.

She said there was minimal enroute weather to contend with. There was a "little deviation" for some thunderstorms, but not much.

She said the weather on the ATIS (automated terminal information service) for ATL was CAVOK (ceiling and visibility okay).

Asked if the ILS for 27R had been NOTAM-ed (notice to airmen) out, she did not recall. She did not question the tower as to why she was not able to pick up the frequency.

She recalled asking CA Stephens if he had the visual and the VASI in sight to which he responded yes to both. She did not recall if she asked him if he had the runway in sight. She said she did not have the runway in sight.

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They were cleared for the sidestep maneuver at around the DEPOT intersection. She said they did not conduct a brief at that time to discuss the approach light configuration. She said she did not see 27R because she was heads down at that point and the only lights she recalled seeing were the PAPI lights and they indicated that the airplane was on glidepath.

She said the PAPI was located on the right side of runway 27R which was on the left of taxiway Mike.

The change of command took place about 2.5-3 hours from landing or 6 hours into the flight. FO Meyers said it occurred so late in the flight because they thought that CA Kelley was “working his way back up front”. FO Meyers was asked if they were still holding out hope that CA Kelley would come back up front to relieve one of them for the last break period. She said “yes”.

She said she was mostly heads down for the approach. She thought that the landing was good and smooth, there was no bouncing and had smooth deceleration.

Asked if she recalled the lights on approach to 27R, she said the most she remembered seeing was that they were on the visual glide path, the PAPI.

She did not know if the duty pilot was ever involved in the communication process when flight control was called on the satellite phone.

While “heads down” on the approach, it was asked what the ADI looked like. She did not recall seeing “flags, needles, nothing”.

She said her vision was correctable to 20/20. She had glasses that she occasionally used for reading but she was able to pass her FAA physical without wearing them. She said she was wearing her glasses on the flight for the approach and landing. She did not have any issues with her color vision.

She thought the last time she took her allergy medicine was the day before this trip began.

FO Meyers had had medical assistance at a gate on a previous flight because someone got sick in the back but she never had to divert for a medical emergency. She did not recall if she declared an emergency. She did not recall but did not think she contacted the University of Pittsburgh Medical Center on that flight.

FO Meyers said the duties of the pilot monitoring on approach were to back up and monitor what the flying pilot was doing, and check localizer, glideslope, and airspeed deviations.

Asked what her view was of runway 27R, she said they were fully configured when they did the sidestep. There was nothing unusual in the cockpit except not being able to get the back up tuned. She said the only lights she recalled seeing for 27R were the PAPI and that CA Stephens was on the glidepath.

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When asked if there were any particular calls required on final approach to identify the runway from the marker inbound, she said they had a 1000 foot cleared to land, and a 500 foot check call. She did not think there was anything else. The procedure as she recalled it was to provide any navigational backup that they can have, in this case the ILS.

When asked if the approach lights were on for runway 27R, she said she was “not sure”. She said she was later told that the approach lights were not on for 27R but she did not recall seeing any other lights besides the PAPI. She was asked if it was the role of the flight crew to request that the approach lights be turned on or if that was something that was expected of ATC; she said she would expect ATC to do that at a controlled field. She was asked if the lights were not on, would it be a normal crew function to request that the lights be turned on. FO Meyers said she had never been in that circumstance so she could not give an answer. She said she might ask ATC to turn the lights on if she realized they were not on.

She said she could not think of any recommendations or changes to procedures that would help a future crew faced with a similar situation at the time of the interview.

She did not have anything else to add to the interview.

The interview concluded at 12:45 PM

Interview: Captain Craig Stephens – Delta Airlines (DAL)

Date: October 28, 2009

Location: via telephone

Time: 1318 EDT

Present: David Helson, Katherine Wilson, David Lawrence - National Transportation Safety Board (NTSB); Henry (Hank) Sardelli – Delta Airlines; Warren Bildstein – Airline Pilots Association (ALPA); Philip (Mike) McKinney – Federal Aviation Administration (FAA)

Captain Stephens was represented by Mr. Bill Elliott – ALPA.

During the interview, Captain (CA) Stephens stated the following information:

He was 47 years old and was employed as Captain at Delta Airlines. He had worked for Delta for about 19 years. He said he had logged about 13,000 hours total time and about 3,100 hours in the Boeing 767. He said he had about 2,600 hours in the 767 as a first officer (FO) and about 500 hours as a captain. CA Stephens said he started flying while in high school in about 1979. He obtained his private pilot certificate and then went to Purdue University where he attended the aviation program and graduated in 1985. After graduation he said he flight instructed, hauled sky divers, flew night cargo, flew corporate, and flew charter and was then hired by Delta Airlines in 1990. At Delta Airlines he had flown the 727, 737, 757, 767, and the MD-11.

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CA Stephens said he was the captain on a flight that departed from Rio de Janeiro on Sunday October 18, 2009, bound for Atlanta (ATL). He was receiving an SAQ (special airport qualification) from a check Airman who was seated in the right seat. He said prior to push back, the check airman went back to the lavatory and, while he was back there, a flight attendant came up and advised that he was vomiting in the lavatory. He said the check airman was the captain of record and he came back up to the flight deck and said he was “fine”. CA Stephens said he had no reason to doubt the check airman’s self-assessment.

CA Stephens said there had been a slight problem with the AWABS (aircraft weight and balance system) because their performance paperwork did not reflect the tailwind being reported. He said they coordinated with ATL and the tower to get the actual winds. He said the issue was resolved and they had a normal taxi, takeoff, and climb out. He said once in cruise he suggested CA Kelley take the first break, which he did. He said he called back to the cabin when it was time for the next break and the flight attendant (FA) advised him that CA Kelley did not respond when she shook his pillow. CA Stephens said after discussing with the FO, he decided to let CA Kelley use some of his break as well. The FA later advised that CA Kelley was experiencing diarrhea and vomiting and that they had paged a doctor.

After some discussion back and forth, and consulting with the FO, CA Stephens said he decided they did not need to divert and they would press on to ATL. This decision was reached about “mid-Caribbean”. He said he contacted dispatch via SATCOM (satellite communications) to request that emergency services would be waiting for them in ATL. He said other than the SAQ he was qualified for the operation and he asked dispatch to make him the captain of record. They continued toward ATL and they discussed some of the other airports on the way up. CA Stephens said he decided that CA Kelley should not come back up to the flight deck. He said they decided to keep the flight deck lights up bright and have FAs come up to visit in an attempt to “keep fatigue at bay”.

CA Stephens said prior to descent, which began early around Macon, Georgia, they briefed a visual approach with an ILS (instrument landing system) back up to runway 27L. When they checked in with ATL approach control, they were told to expect 26R so they re-briefed for that approach and set up the FMS (flight management system) for landing 26R. The approach controller then cleared them direct ANVAL intersection, which was on the approach for 27L. He said they queried air traffic control (ATC) who told them they were going to be on 27L now and confirmed that the flight crew preferred to land on 27L. He said when they were around DEPOT intersection, the controller offered runway 27R. CA Stephens said they had the parameters and since they were an emergency, he decided to accept it and asked the FO to set up the approach for 27R.

CA Stephens said he looked up and saw the edge lights, “locked in” on the PAPI (precision approach path indicator) lights because he did not have the glide slope and followed them in. He said the FO kept trying to get electronic guidance set up as a backup for the visual approach. He said when the main wheels touched down and he was in reverse he realized the edge lights were blue, not white, and at that point “it was too late”. He said the next communication from ATC was taxi instructions.

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CA Stephens said that prior to the flight when CA Kelley had returned to the flight deck after being ill; he was not concerned about CA Kelley's condition. He said on the flight down to Rio, CA Kelley had shared that he had acid reflux and CA Stephens had thought that might have been the problem. CA Stephens said he was not concerned about the rest of the crew becoming ill because, as far as he knew, they had not all eaten together.

He said the flight attendant B coordinator had paged the doctor in flight and relayed to the flight deck that they were trying to get fluids in CA Kelley because he was dehydrated. He had relayed that in the doctor's opinion, CA Kelley could continue to ATL and there was no need to divert the flight. The doctor had also suggested that they have emergency medical personnel meet the flight when they arrived.

CA Stephens said he contacted dispatch via the satellite phone and advised them that the check airman was ill and requested emergency medical services to meet the airplane in ATL. CA Stephens said that his understanding was that anytime you requested the crash trucks, emergency equipment, or emergency medical services, an emergency status was triggered for the flight. He said the only time ATC had made a reference to emergency status was after they had landed in ATL. He thought it was while they were taxiing to the gate that ATC mentioned the emergency medical personnel.

CA Stephens said the company procedure was to determine if there was a medical emergency using a doctor. He said the company had a contract with UPMC (University of Pittsburgh Medical Center) and they had the option of using them. He said they were available to help determine if there was a medical emergency and how critical it was. He said he had been on flights before where they had a passenger with a heart attack, and another flight when a passenger had kidney stones. His understanding was that if there was not a medical professional on the airplane of a "level to make informed recommendations" then using UPMC was the next best asset. He said he was not aware of any description of which medical professionals were acceptable. He said if he did not have a doctor on board he would contact UPMC and that the idea was to utilize the highest level of expertise available.

CA Stephens said the primary input from the physician on the airplane suggested that CA Kelley was well enough to continue the flight, and a diversion was not necessary. He said as they proceeded through the Caribbean, he thought that Port Au Prince, Haiti, might not be the best place to divert, and by the time they got to the Miami area, which would have been the next place to divert; they were only about one to one and a half hours from ATL.

He said he did not have any concerns about the rest of the crew becoming ill once they were airborne.

CA Stephens said that during the approach brief he had identified fatigue as being the highest risk, "in retrospect rightly so", for this approach. He said in this case they were planning a visual approach but had all of the electronic backups (localizer and glide slope) available. He said to mitigate those risks; you want to have all of the aids both inside and outside the cockpit available to you.

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CA Stephens said the company procedure for accepting a visual approach was to have the runway in sight and use electronic back up, which they did. He said if there was no electronic back up, they were not banned from shooting the approach; they could still do it if nothing was available.

He had been based in ATL for five years.

He said he was not sure if he had ever landed on runway 27R at ATL and if he had, it had been many years ago. He said runway 27R was normally used for departures. He said they would load the approach in the FMS for a visual and it would show up on the navigation display if it was available. He said it was normal to load the runway you intended to land on in the FMS. He said it was difficult to load it late in the approach but he had requested that of the FO. CA Stephens said he did not have any concerns about landing on runway 27R because the weather was good and ATC advised something similar to “there is no one else on 27R, if you want it”.

Regarding a sidestep approach maneuver, CA Stephens said he could not recall any specific company procedure except that there was a ban below 500 feet. He said for any approach, you had to be stabilized.

CA Stephens said that on the descent the first thing he had in sight was the lights of Atlanta probably when he was around Macon, Georgia. He said he knew where the airport was in relation to the city and the terminal lights were the easiest thing to pick out. He said as he intercepted the approach course for 27L he had the approach lights and runway lights in sight for runway 27L.

CA Stephens said that when they were cleared for runway 27R, he looked up and saw, slightly to his right, edge lights, centerline lights, and the PAPI. He said as he maneuvered the airplane for the sidestep, he locked on to the PAPI and said “unfortunately, the bright edge lights, and centerline lights that I thought were 27R turned out to be for taxiway mike”. He said he did not see any approach lights or lead in lights for runway 27R and said as far as he determined, post event, they were not turned on.

CA Stephens said when they accepted the clearance to runway 27R the airplane was stabilized and configured with “gear down, flaps 25, on speed, and landing check complete.” He thought that the autopilot was coupled up until they accepted runway 27R but could not recall for certain. He said he had previously briefed a coupled approach to a manual landing. He said the auto throttles were on, the flight director was on but would have still been providing guidance for 27L glide slope and localizer. He said he asked the FO to dial up the 27R approach frequency.

CA Stephens was asked what the pilot monitoring duties were on a visual approach and what he would expect from the PM on a visual approach inside of 1,000 feet. He said in this case he expected the FO to bring up guidance for runway 27R, replacing 27L as requested. This required the FO to be heads down until accomplishing the task. He said if they had stayed with 27L approach, he would have expected the FO to be watching outside, except at the 500 foot call the FO would look inside to confirm the airplane was on localizer, glide path, on speed, stabilized and confirm a verbal “checks” callout from the other pilot.

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CA Stephens said he was already in reverse thrust when he realized he had landed on a taxiway. He said if only the mains had touched but the power was still up, he could have rejected the landing.

He did not recall ATC calling any traffic in the air or on the ground. He said it was very quiet on the frequency that morning. He said there may have been someone coming in to the north side of the airport but he did not think there were any other airplanes coming in to the south side of the airport at that time. He said after landing they were fairly close to the control tower and he was surprised that ATC did not say anything to them. He said there were no annunciations or warnings on short final or at touchdown. He said the ramp tower had relayed to them a phone number that the tower wanted them to call.

CA Stephens said after shutdown he briefed the EMTs (emergency medical technicians) and then he called the phone number using his cell phone from either the cockpit or jetway. He said when he called he identified himself as the captain of Delta flight 60 and said that he “knew why you wanted me to call”; “I landed on a taxiway”. He said the person on the phone said something similar to “we were not sure we could believe what we saw” and they advised him that there would be an investigation started.

CA Stephens said company policy required him to notify the chief pilot and operations, which he did. He said he also completed a NASA (National Aeronautics and Space Administration) form and an ASAP (aviation safety action program) form.

Regarding the coordination upon arriving at the gate, CA Stephens said it was frustrating. He said after they arrived at the gate and were shut down with the chocks in, there was some difficulty moving the jetway. He said it took several minutes to get the jetway in place so the EMTs could get on the airplane. He said if this had been a life or death situation it could have resulted in a very negative outcome.

Regarding training for dealing with medical emergencies, CA Stephens said that the company covered it with “distributed training”, which included a CD (compact disk) for a computer. The training included information about contacting UPMC and “other things”. He said in the simulator they concentrated mostly on loss of pressurization, engine fires, and airplane systems and mechanical control issues rather than medical emergencies. He said they did occasionally simulate an incapacitated crewmember in the simulator. He said the instructor would tap one pilot on the shoulder and advise him to be unresponsive to see if the other pilot would recognize the incapacitation and take appropriate action.

CA Stephens said during training there were usually several visual approach scenarios combined with other things like a circling approach or a crosswind landing. He said he did not recall if there had been any sidestep approach scenarios in training. He thought he had done them in the past but did not recall them being part of recent training modules. CA Stephens said his last recurrent training was about six months ago and it was comprised of the one day proficiency simulator training. He said he was due for his recurrent training in either November or

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December 2009, or January of 2010. He said his last FAA medical was in September 2009 and he had no restrictions, limitations, or waivers on the medical certificate.

1415 break

1420 resume

CA Stephens said he had never been a check airman at Delta Airlines.

He said he was not sure what kind of doctor they had assisting CA Kelley on board but recalled that he was an MD and had a practice in New York.

CA Stephens said he understood an airplane's emergency status meant that they would receive expedited handling, and no holding or undue delays.

CA Stephens said that the first crew break occurred about 45 minutes into the flight after the top of climb. He said if the check airman had not been ill, the normal process would have been for the relief pilot (FO in this case) to take the first break, followed by the pilot flying (CA Stephens), and the pilot monitoring (the check airman in this case) would have taken the last break.

Regarding company guidance for an incapacitated crew member; CA Stephens said that once a pilot was identified as being incapacitated, that pilot was denied access to flight controls. He said once CA Kelley was ill and off of the flight deck, getting the needed rest breaks for him and the FO was not an option anymore. He said they stayed alert by turning the flight deck lights up bright and having a FA stay up on the flight deck with them, and talking. He said he wanted to avoid getting into that "sleepy, head nodding scenario".

CA Stephens said normally they would have a captain and two FO's and if the flight duration was more than 12 hours, they would schedule two full crews. He said other than trying to stay alert for it; they did not do anything differently to address fatigue. He said they stayed within their normal pilot flying, pilot not flying duties. He said when fatigued, he may not have noticed if the FO missed some radio calls, and the FO may not have noticed if he missed some clearances but recalled they had been cleared direct to ATL when they were south of the Keys.

Regarding the descent notification, he said they usually notified the cabin crew at about the time they were descending through FL180 (flight level 180, eighteen thousand feet). He said he could not recall in this particular flight where that occurred but estimated it was about the time they passed Macon, Georgia. He said the notification would be done via the PA (public address) system and would state "flight attendants prepare the cabin for approach".

CA Stephens had made the decision to fly the approach. He said he was not concerned about that decision based on fatigue because the FO had been up as long as he had been.

When asked what back up assistance he would expect the FO to provide on the visual approach, he said in this situation he was locked on to the PAPI and he thought the FO was trying to get the electronic guidance set up because he had asked for it. He said the actions could be a function of

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fatigue. He surmised that if this was noon and they had just done a 90 minute flight from Chicago, the FO probably would not have stayed heads down working on the approach set up but would come back up.

CA Stephens said he did not notice any ground vehicles around the taxiway at touchdown. He said he did not complete a drug or alcohol test after landing.

CA Stephens was asked to describe his activities in the 72 hours prior to the taxiway landing. CA Stephens said that the previous Friday morning was a school holiday and his kids were at home. He said he woke up around 0630-0700, had breakfast, walked the dog, went for a run, and later in the day, took a nap for about an hour. He said he drove in to the airport early so he would have time to update his charts and meet with the check airman. He said it was a normal flight down to Rio, he felt rested and they got in Saturday morning.

He said it was a normal layover, he took a nap for 3-4 hours and then met with some of the crew for dinner and then was back at the hotel about 1130 pm or 12 am. He said Brazil went through a time change that night, "where they Spring forward for summer time". He said he slept until 0930-1000 AM on Sunday morning. He said he stayed around the room for a while doing email, went to the exercise room for about 45 minutes to use the elliptical, and then tried unsuccessfully to take a nap. He said he just could not fall asleep. He had not been hungry during the day so he did not eat.

He said he went down to the hotel lobby for pick up early, had a cappuccino and then went to the airport with the crew. He said he felt fine. He said he had been awake for about 11 hours which he said was not an unusually long time but he was looking forward to his 3 hour break on the airplane. He said he normally can get a good amount of rest during his break on the airplane.

CA Stephens said he prefers to get 8 hours of sleep to feel well rested and said he was naturally an evening person but events in life had pushed him toward being a morning person. He said he was on reserve and was pretty junior in his seat so he did not have a normal schedule. He said he had requested this trip so that he could become qualified for flights to Rio. That way, he said, he would be eligible to fly those trips if needed by the company.

He said prior to this trip, his last one was a trip to Bogota on the 1st and 2nd of October.

CA Stephens said he had not had any previous accident, incidents, or violations on his record.

He said there had not been any significant changes in the last year in his health or personal life, except they had added a puppy to the family a few weeks ago. He said the puppy slept well and did not keep them up at night. He said his wife had been laid off from her job in April 2009 so that had been "another 50 plus percent pay cut to the family treasury". He said that did not impact his performance but it did make him want to fly more trips.

CA Stephens characterized his health as excellent, his vision and hearing as good. He said he was approaching the need for reading glasses but did not need them yet. He said he did not wear any corrective lenses and had not ever had any problem with color vision.

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CA Stephens said he used one prescription medication, a NSAID (non steroidal anti-inflammatory drug) called Diclofenac, 75 milligrams twice per day. He said he had no side effects or restrictions on flying as a result of the medication. He said he used alcohol moderately and the last time was the day before the flight when he had 1 or 2 Guinness with dinner. He said he did not use tobacco products and had not used any prescription or non prescription medication in the 72 hours prior to the flight that affected his performance.

CA Stephens said the workload on this flight was higher than normal because they were dealing with issues related to CA Kelley being sick. He said they tried to keep themselves mentally stimulated to remain alert.

He said they did not have any problems with the airplane but it did require a few attempts with the satellite phone before being successful reaching dispatch. He said there was nothing inside or outside the airplane hindering his view.

Regarding his mood during the flight he said he was tired and probably looking forward to completing the flight. He said there were no external pressures from the company to continue on duty when fatigued.

CA Stephens said the FO's mood was professional, she appeared to be alert and on task. He said the FO's proficiency was good. He said he had not flown with FO Meyers or CA Kelley before.

Regarding the merger with Northwest Airlines, CA Stephens said there had not been any changes in duty schedules; they were still operating as separate pilot groups. He said they were on phase 4 of 5 on integrating company procedures. He said the merger had not caused any stress but it was definitely a topic of discussion.

CA Stephens said the only company guidance he recalled about fatigue was a paragraph in the FOM (flight operations manual). He said that ALPA had put out a guide on fatigue a while back but he forgot to reference it during the flight.

He said that CRM (crew resource management) was covered in training at Delta. He recalled that it used to be a half day course in transition training and that it was now part of the distributed training on CD. He said threat and error management training was incorporated into the CRM training but he did not recall if it specifically covered fatigue. He said the threat and error management training was what led him to start the approach preparations earlier, prior to descent, in order to give them more time to complete their duties.

CA Stephens said they had been dispatched as a legally augmented crew and there was no requirement he was aware of to divert due to a duty time restriction. He said the flight fell within their legal duty period.

He said ATC did not ever mention that they had a medical emergency until after they had landed and were taxiing in. He said it was not part of their call sign.

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He said he was not sure what problem the FO was having loading the approach in the FMS. He said after the fact, he found out that the ILS for 27R was turned on to prevent you from having “off” flags displayed, but it did not radiate a signal, to prevent a crew from accidentally tuning in the wrong frequency and capturing the glideslope guidance and following it to the wrong runway. He said he thought that was why the FO had trouble setting up the frequency, because it was there but was not working. He said he was not sure if the FO was trying to load the approach before or after inputting the new runway; he was focused on the PAPI at the time. He said he did not know if the FO had ever gotten the new runway (27R) loaded in the FMS.

CA Stephens said that Delta conducted pilot training under AQP (advanced qualification program).

He said he had done a sidestep maneuver before and thought that it was during the day and when he was flying a different airplane, not the 767.

When asked if he thought he would have been more efficient if he had taken an opportunity to take a short nap on the flight, CA Stephens said “yes”.

CA Stephens said the conversation he had with the flight controller in dispatch was fairly short and succinct. He was not aware if dispatch had consulted with the duty pilot. He said it may have occurred later but he did not think it occurred during the call.

CA Stephens said that he was lined up on 27L which had the lights on and when he maneuvered for the side step, he lined up and landed on the next brightest set of lights he saw.

He said when he got the side step he had not asked ATC to turn on the approach lights. He said when he looked up; he saw the bright edge lights and centerline lights and thought he had the runway.

CA Stephens said that he thought when the FO made a comment about going lights out prior to the descent, she was probably referring to turning the flightdeck bright white lights down to allow their eyes to adjust to the dark conditions before landing.

CA Stephens said he had not briefed the side step maneuver to 27R. He said the company procedures banned them from accepting a side step below 500 feet and the approach needed to be stabilized. In this situation it would not have been possible to brief the sidestep to 27R after receiving the clearance.

CA Stephens said he referred back to previous, but not recent, training where he distinctly recalled learning that whenever he requested any kind of emergency service, that was the equivalent of stating “mayday” or “emergency” for my flight.

CA Stephens was asked if he had any suggestions based on what he had learned from this event. He said he thought the SMGCS (surface movement guidance control system) lights and taxiway centerline lights should not be turned up in visual conditions. They should only be used in low visibility conditions.

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He said he would now be much more aware of the insidious effects of fatigue. In hind sight, he said he probably would not have continued the flight to ATL; he would have diverted to shorten the flight, possibly land in Miami.

He said he had been working on some suggested language changes in the company FOM regarding crewmember illness, incapacitation, and fatigue which he said he would provide to the company via email.

He said he also will not, in the future, accept anything he has not had time to brief. And, he said he will not accept a sidestep maneuver at night.

CA Stephens said he would encourage anyone faced with this situation in the future to consider doing an autoland to the runway.

Interview ended at 1508.

Interview: Captain Craig Lee Kelley, Line Check Airman – Delta Airlines (DAL)

Date: October 28, 2009

Location: via telephone

Time: 1520 EDT

Present: David Helson, Katherine Wilson – National Transportation Safety Board (NTSB); Henry (Hank) Sardelli – Delta Airlines; Warren Bildstein – Airline Pilots Association (ALPA); Philip (Mike) McKinney – Federal Aviation Administration (FAA)

Captain Kelley was represented by Mr. Bill Elliott – ALPA.

During the interview, Captain (CA) Kelley stated the following information:

He was employed by Delta Airlines as a captain and was a 767-300ER check airman. He had logged about 16,000 hours of total flight time and about 12,000 hours on the 767. He said he had logged about 8,400 hours on the 767 as a first officer (FO) and about 3,000 to 4,000 hours as a captain. He held type ratings in the 777, 757/767, and commercial privileges in the L188.

CA Kelley said he was a second generation Navy and airline pilot as his father had also been an Eastern Airlines pilot. He said he received his commercial pilot certificate while in college then joined the Navy. He spent one and a half years in flight training and was transferred to the fleet where he flew the P-3 Orion. He was hired by Western Airlines in 1986 and the company was acquired by Delta Airlines in 1987. At Delta he had held the positions of FO on the DC-10, 737, 767, and the 777 before upgrading to captain on the 767. He said he had flown international for the company for about 18 years. He said he had been a line check airman for almost 3 years. He had also been the liaison pilot for Delta operations to Bombay and he wrote the route publications for flying across Arabia to Bombay.

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CA Kelley was asked to describe the events of the incident flight. CA Kelley said the crew arrived at the gate in Rio de Janeiro and had to wait a little while for the airplane to arrive. Once the airplane arrived at the gate, he said that he and CA Stephens started to get the airplane set up for departure and conducted their preflight briefings. He said during this time, he started to feel a little discomfort so he went back to the lavatory and proceeded to vomit. All he had had to eat recently was a cappuccino and some peanuts at the hotel.

He said he had a previous instance where he had become ill from some soup that he ate and he felt better once he had thrown up. Based on that previous occurrence, he thought he would have a similar result this time, and would feel better after he vomited. When he returned to the cockpit, CA Stephens asked how he was. He told him he felt fine and they continued with the flight.

CA Kelley said they had to contact dispatch and flight control regarding an issue with the AWABS (aircraft weight and balance system). He said the ATIS (automated terminal information service) was indicating a 6 knot tail wind, which was not accounted for in their performance numbers. He said he also contacted Rio clearance delivery via radio to obtain an update on the wind at the airport. He said they sent a message to ATL and determined that the information they had was valid for departure on runway 33. He said there were some ground delays due to the runway in use and also because the Porto VOR (very high frequency omni-range) navigation aid used on the departure was out of service. This added about 30 minutes to the scheduled block time for the flight. They used the MARICA departure.

CA Kelley said the takeoff and climb out were normal. They had climbed out over EKUBA intersection and around Barbacena there were a few thunderstorms they had to deviate around. He said they leveled off at FL340 (flight level three four zero, thirty four thousand feet) and he was feeling fine. He said FO Meyers did the computation for the rest breaks and they called the FA to let them know they were ready to send a pilot back for a break. He said CA Stephens asked him if he wanted to go first and he accepted.

CA Kelley said he went back and read for about 45 minutes and then he became ill and had vomiting and diarrhea. He said he was getting dehydrated. He said when the FA tapped his shoulder he told her he was not feeling up to going up front. After a while, the B coordinator, Tom, asked him if he wanted a doctor and he agreed that it was a good idea and to also notify CA Stephens. He said the B coordinator found a doctor, Jesus Cheda. He said the doctor was a surgeon who had a practice in New York and also one in Rio de Janeiro.

CA Kelley said he answered some questions for the doctor and the doctor crushed some Imodium tablets into some tea for him to start getting some fluids. He said he had the diarrhea for two and a half days after the incident flight. He said the doctor told him he had food poisoning. He said CA Stephens had called back to see if we needed to divert but after talking with the doctor, they decided he did not need to go to Miami. CA Kelley said after the EMTs checked him out in ATL, they told him he did not need to go to the hospital.

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CA Kelley said he went to see his primary care physician the following day. He ended up seeing one of the partners in the practice, Dr. Lisugi. He said the doctor advised him that he probably had food poisoning and prescribed an antibiotic.

CA Kelley said the first rest period on the flight occurred about 45 minutes after takeoff. He said he took the first break and was seated in business class seat 6C. He said his understanding was that as soon as they had requested a doctor, CA Stephens had called flight control to change the captain of record.

CA Kelley said it was customary for the relief pilot to calculate the rest periods. He said the relief pilot would take the total planned flight time, subtract 1 hour for the climb and descent and then divide the remainder by three to determine how long each rest break would be. He said usually the relief pilot took first break, followed by the pilot flying and then the pilot monitoring. He said once he became ill, he did not return to the flight deck for the remainder of the flight.

When the airplane landed in ATL, he said he did not notice anything unusual; it seemed like a normal touchdown and deceleration. He looked out the window and thought they were landing on 27R. He said he could not think of another instance when a pilot lined up on the taxiway rather than the runway. He said he had landed on 27R before during the day but after consideration, said that it was actually the opposite runway 9L.

CA Kelley said he did not complete a drug or alcohol test after the flight.

He said he did not have any young children at home as his were all grown. He said he had not come in contact with anyone who appeared to be sick in the previous 7 – 10 days.

CA Kelley was asked to describe his activities in the 72 hours prior to the incident. CA Kelley said that on Friday, October 16, 2009, he woke up at about 800 AM, went for a run, and then did some things around the house like pack for the trip. He said he left for Palm Beach Airport about noon and took the 220 PM flight out of Palm Beach that arrived in ATL about 415 PM. He said he went to concourse E, did some computer work and gave his books to “the guy that did his revisions”. He said he met with CA Stephens at about 730 PM, which was about 30 minutes before the required brief time. He said they discussed operations into Rio, printed up required paperwork for the trip, checked the weather, and then he released the 4th crewmember (an additional FO that had been assigned) from the trip.

He said after they briefed the flight attendants, he and CA Stephens went out and conducted the preflight. He said it was a normal departure, climb and cruise followed by a normal approach to landing runway 10 at Rio. He said he went to the hotel and slept until about 430 PM. After he woke up, he met with the crew and his girlfriend to go out for dinner. He said he ate a seafood platter with his girlfriend at a local restaurant. He said CA Stephens and FO Meyers left at that point. CA Kelley said he returned to the hotel and went to sleep about 1100 PM.

CA Kelley said he woke up on Sunday at about 830 AM and had breakfast. He said he took a nap until about 2 PM and then he went for a run about 4 PM. He said pick up time was at 750

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PM and he went down about 30 minutes early and had a cappuccino and some peanuts. He and the crew took the van to the airport.

CA Kelley said he had relieved the other FO at the start of the trip because it was permitted in the FOM (Flight Operations Manual) to do that on an SAQ. He said the FO that was released was more senior than Meyers and also had some family activities; that was why he released that FO.

CA Kelley said he felt rested prior to the flight and that he normally needed about 6-7 hours to feel rested. He characterized himself as a morning person.

He said he was scheduled for four of the Rio trips in the month of October, on the weekends, and he had 2 or 3 days off prior to this trip.

CA Kelley said his health was “quite good” and that he had the blood pressure and heart rate of a teenager.

He said the only medication he took was a PPI (proton pump inhibitor) called Protonix for reflux. He said he usually took that medicine at about 4 PM each day and he had had no side effects or limitations for use while flying. CA Kelley said the medicine was prescribed by his flight surgeon. He had not taken any non prescription medication besides vitamins in the 72 hours prior to the flight. He said he did not smoke and he drank alcohol occasionally. He said the last time he had alcohol was 2 pints of beer on Saturday night with dinner.

CA Kelley said there was nothing on the airplane that hindered his view outside the flight deck.

He said he did not feel tired before the flight. He said CA Stephens’ mood was professional and proactive, and FO Meyers’ mood was about the same. He said they were “a good team”. CA Kelley said he knew CA Stephens but had not flown with him before. He had flown with FO Meyers two times.

CA Kelley said that CA Stephens’ proficiency was “very good” compared to other pilots. He said that CA Stephens had completed most of the crew duties and briefings himself prior to leaving Rio. He said he was well prepared and he flew very well. CA Kelley did not fly with FO Meyers on this trip but had flown with her before. He said she was average, and that she was a proficient first officer.

CA Kelley said that CA Stephens and FO Meyers both appeared alert and he had not seen them yawn or indicate that they were tired.

CA Kelley said when he went to dinner in Rio on Saturday; he was with CA Stephens, FO Meyers, FA named Tom, two other FAs, and his girlfriend. He said that his girlfriend had not become ill after the trip.

CA Kelley said chapter 10 in the FOM included information about pilots recognizing when another pilot was incapacitated. He said it included the “two communication rule” where if a

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pilot did not respond to two successive communications a pilot must determine incapacitation. The guidelines were to remove that pilot from a control position and not allow him to return, make sure they were tended to by a medical professional, and contact flight control. He said there were no specific recommendations on what to do but the FOM did have guidance for possibly declaring an emergency, considering a diversion, and conducting a coupled approach to landing.

He said during training sessions in the simulator, an instructor would occasionally tap one pilot on the shoulder and have him simulate incapacitation to see if the other pilot responded.

CA Kelley said company manuals included guidance on conducting visual approaches. He said the use of electronic back up was normal and an ILS (instrument landing system) was preferred if available. The guidance included stabilized approach criteria that required certain parameters be met at 1,000 feet and 500 feet above the runway.

He said if no electronic guidance was available, you needed to be in visual contact with the runway, use the PAPI or VASI (visual approach slope indicator) for vertical guidance, or request a different runway, if one was available. He said there was also a technique of setting up the runway in the FMS (flight management system), extending the runway out and adding some mileage markers. He said that was not a procedure, only a technique.

CA Kelley said he had not landed on runway 27R but he had landed on 9L many years ago when he had an emergency on board. He said he had been based in ATL for about the last 2 years. He was based in New York for 2 years before that and was in ATL prior to being based in New York. CA Kelley said that the inbound runways at ATL were normally used for departures.

CA Kelley said the FOM chapter 10 had guidance related to medical emergencies and included phone numbers and contact information. The guidance indicated that a crew should contact UPMC if they needed to use the EMKs (emergency medical kit) to treat a passenger or crew member and if planning a diversion to determine if it was necessary. He said they would prefer to use UPMC than an onboard medical professional, especially for a serious condition like a heart attack.

CA Kelley said he first found out that they had landed on a taxiway when he was driving home and received a phone call from Reid White in the Chief Pilot's office. He said later CA Stephens had told him that he did not advise him after the flight because he was ill and there was really nothing he could have done.

CA Kelley said he did not recall having an emergency medical scenario in his simulator training. Regarding the visual approach, he said the crew was required to brief the approach and any changes after the initial brief "to the extent that you can". He said in the case of a sidestep maneuver, you might not have time.

CA Kelley was asked if the released FO had contacted crew scheduling and he said he was not sure.

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CA Kelley said that other than the FOM, there was not a lot of information from Delta Airlines regarding fatigue. He thought the training CDs offered guidance on standing up and stretching during a flight to reduce the monotony and engaging in conversation to stay alert.

He said training or guidance on CRM was included on the CDs. He said the idea was to work diligently to include all crew members in the process of voicing concerns about things they see that may not look right. He said when he did a briefing he advised crew members that just because he was a check airman did not mean he was always right. He encouraged them to speak up if they saw something and thanked them when they did.

CA Kelley said the CRM training included threat and error management. He said the training emphasized voicing concerns and identifying risks. Part of the required briefings was to identify the threat or risk that they perceived to be most significant for the particular phase of flight.

Interview ended at 1620.

Interview: Captain James Dennis Mangie Jr., Lead Line Check Airman B 757/767 – Delta Air Lines (DAL)

Date: December 16, 2009

Location: Delta Air Lines Flight Operations Center, Atlanta, Georgia

Time: 1610 EST

Present were: David Helson, Katherine Wilson - National Transportation Safety Board (NTSB)

During the interview, Captain (CA) Mangie stated the following information:

He was employed by Delta Air Lines as a lead line check airman B757/767 and also worked as a fatigue and flight time/duty time subject matter expert (SME). He said the SME position was not full time; it was more of a project.

He said he graduated from Embry Riddle Aeronautical University (ERAU) in 1981 with an Aeronautical Studies degree. He had flown while in college and graduated with a commercial, instrument multi engine rating certificate. After college he went into the Air Force, active duty, where he flew C-130 airplanes for 7 ½ years then was in two different units in the Air Force Reserves. He said he was in the military for a total of 22 years and had flown for 20 years of that time. Except for training airplanes, all of his military flying had been in C-130 airplanes. After his active duty period, he was hired by Delta Air Lines in 1988 as a line pilot until 1996; he was an instructor for two years and then went into management. He said he had held the positions of assistant chief pilot, chief pilot, general manager domestic operations, line check airman on two different fleet types, flight training instructor, and proficiency check airman. He said he had

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logged about 10,000 hours total time in airplanes. In the military he said he had held positions as an instructor and evaluator.

Capt. Mangie said his duties and responsibilities as a lead line check airman were to instruct and evaluate other 767 pilots at DAL either new to the airplane or as part of continuing training as a representative of the FAA. He said the duties and responsibilities of the SME position were to take actions and constantly evaluate the things that they did to ensure they were updated or continually improved and to take action or start new processes to evaluate the procedures as they were needed. He said in his SME position he reported directly to the Senior Vice President of Flight Operations, Steve Dickson.

Capt. Mangie said the fatigue management program at Delta was more of an informal program right now. He said there were a lot of pieces in various areas that he brought together. He said, for example that the scheduling section of the pilot working agreement was designed to include a number of fatigue mitigating pieces and he monitored that process and how it fit in with other things happening in the world.

He said that at this time there was no formal classroom training available in Delta's continuing qualification training program for pilots on fatigue mitigation strategies but there had been in the past. He recalled that back in 2000-2002 there was some information provided to pilots as a risk management resource. In 2006, the effort continued as Delta began flying ultra long range routes. He said the reason the training did not continue in 2002 was primarily due to September 11, 2001. He said they had originally set out on a 4 or 5 year plan for the training but 9/11 had turned things around; there were a few really difficult years in the industry.

Capt. Mangie said that Delta had an alertness management guide that was a web based document. He said back in 2002 they had issued it to all pilots. The alertness guide was updated in 2006 and was issued to all of the 777 pilots as part of the ultra long range awareness and mitigation program. He said it was also available on the web to all of their pilots. He said the core document had been written by Dr. Rosekind and he had reviewed it again when they updated it in 2006. He said the guide was given to 777 pilots in printed format but it was also made available to everyone online. He said pilots were made aware of the online guide by bulletins. He said the 777 pilots received additional information every time there was a new ultra long range route established.

Capt. Mangie said he was familiar with ALPA's Airline Pilots Guide to Fighting Fatigue but it was not something the company distributed; that was handled by ALPA. He said it had some of the same information as the company produced guide. He said that one of the people that worked on that project, also worked with him last summer on the FAA Flight Time/Duty Time ARC (Federal Aviation Administration Aviation Rulemaking Committee).

Capt. Mangie said that Delta had a fatigue policy that was presented in the Flight Operations Manual (FOM). He said there was a little guidance on fatigue mitigation strategies in the FOM. Most of the recent guidance was concentrated in the ULR (ultra long range) guides which are currently available on the web. He said the ULR guides were developed for each specific city pair where the route was over 16 hours block time. He said the guides included basic fatigue

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information, information specific for that city pair, and for ULR flying in general. He said the flight from Rio to Atlanta did not have a guide as it was not considered ULR. He said for flights less than 16 hours, the information contained in the FOM was used but there was not specific information such as that included in the ULR guides.

Capt. Mangie said that if a crew had a fatigue issue, they would probably write an ASAP (Aviation Safety Action Program) report. He said if it were him, that is what he would do to detail the event and make everyone aware. He said he knew that to be occurring because he was copied on all fatigue related reports by flight crew members. He could not recall the exact number but estimated that he received about 3-4 such reports each month.

Regarding an incapacitated crewmember, he said that issue was addressed in manuals and training but not necessarily related to fatigue. He said he was not aware of what may be included in the new hire indoctrination training program because it was outside of his purview and he had not had an opportunity to be involved in that training as they had not hired in the last few years.

Capt. Mangie said that as part of the NATS (NOTAMS, Approach chart/automation, Transition level/height, Special pages from airway manual) briefing, flight crews were required to brief what they believe to be the highest threat for a particular descent and approach. He said that he could not address the training conducted for that but he said check airman evaluate the conduct of the briefing and encouraged people to address the issues with more information if needed. For example, he said if there were thunderstorms in the area, it may not be enough to state that; a crew may need to also discuss what they would do about it. He said the check airman evaluated crews on how they handled those situations as part of the NATS briefing.

He said he had been on a flight where he briefed the highest threat as being fatigue. He was asked what he and his crew did to address the issue. He said first thing was to raise the level of awareness. Second he said to “vanilla out” the situation by briefing a very standard, uneventful, predictable end to the flight. As an example he said he would brief what they were going to do, how they were going to do it, and would not alter the plan unless required to respond to some other event.

He said the last time he had a situation like this he briefed something that he had just recently learned during the Flight Time/Duty Time ARC; that we do not usually recognize fatigue symptoms in ourselves very well but we can in others. He said because of this, for the past six months, he has included in his brief that the crew should watch each other and pay attention to the symptoms to see if we observe something that does not make sense.

Capt. Mangie said that he flew the line and that for the last 4-5 months he estimated that he had flown 1 or 2 trips each month.

He said that DAL had specific guidance on approach lights in the airway manual.

Capt. Mangie said he had worked as a co-chair of the flight and duty time ARC that was chartered by the FAA administrator last summer. He said they were given 45 days to develop recommendations to the FAA to re-write the flight and duty time regulations. He said they were

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asked to do that in the form of an NPRM (notice of proposed rulemaking). He said he had never been on an ARC before and from what he had heard, they usually were one year processes extendable to two years and he had been given 45 days with no extensions.

He stated that the FAA could normally take some, all, or none of the recommendations from the ARC. He said the role of the ARC was to provide industry and labor subject matter expertise and that the FAA would have an opportunity to use this information to better understand the user perspective and enhance the rulemaking process. Capt. Mangie felt that the contributions from him and others added value to the ARC.

Capt. Mangie said he had a group at Delta of long haul / ultra long haul pilots he met with recently. He said they were 747, A330, 777, 767-300ER pilots that were highly experienced check airman and fleet captains. The meeting focused on Delta's rest break scheduling, the company philosophy and suggested enhancements. The meeting participants provided input and discussed what the current science was on this subject. Capt. Mangie said he had brought the results of some studies on the length of sleep and methodologies of obtaining sleep on board an aircraft to this meeting. He shared these with the group to explain why they needed to set up the rest breaks the way they did.

He said the meeting resulted in group consensus which helped define the purpose of rest breaks and emphasized the importance of having the most alert pilots possible in the seats during the most critical phases of flight. He said it was important to note that pilots must be at an acceptable alertness level to appropriately respond to normal and abnormal procedures. He said there was a second meeting with that group scheduled for January 14-15, 2010.

Capt. Mangie said he and another Delta pilot would be meeting to discuss the issue of rest breaks. He said they were using a bio-mathematical model to help explain to the line pilots why rest breaks were needed. He said they were planning to develop a guide similar to the ULR guide that would fit in pilot's Jeppesen manuals. He said the purpose of the guide was to describe why to take rest breaks, what was the best place or time to take rest breaks and how to mitigate fatigue situations. He described the guide as both a re-enforcement of procedures as well as an educational effort to make people aware of the latest science on the subject.

Capt. Mangie said he had a meeting scheduled for the next day where they would discuss a new bridge training CD (compact disk) that would be developed for the pilots. The purpose of the CD was to combine the CQ training of both airlines (Delta and Northwest) so that they could synchronize the training program through the merger. He said he was including a block of training on the CD that would address fatigue issues and he said there would also be a block of training dealing with international operations.

Capt. Mangie said that to evaluate the fatigue management he used pilot submitted reports through the ASAP system, CORs and reports from chief pilots. He also received from crew planning personnel, a report on all back side of the clock/redeye flying once a month. He said he reviewed those flight schedules to make sure they complied with contractual and FAR (Federal Aviation Regulation) rules and to make sure there are no unreasonable situations from a fatigue perspective. Any identified schedules that exceeded limits or presented unreasonable situations

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were modified to reduce the risk. He said he meets with the Director of Crew Resources monthly to advise him of what needs to be altered in the schedule. He said a review of the schedules was required each month until they had some better technology.

Capt. Mangie said they used a crew planning system to build their schedules. He said they were working on a new process that included a computer program produced by a Boeing subsidiary. The computer program would use a bio-mathematical model as part of the process to build the schedules. He said Delta was part of a data collection effort that included three long haul carriers. The carriers were providing the data to the software manufacturer to assist with validating the computer model; however the modeling tool was not yet ready to be used for scheduling.

Capt. Mangie said that he also evaluated COR (Crew Operations Reports) and fatigue calls. He said he was advised by the chief pilots regarding any fatigue calls by crew members so that he could review the trip to determine if there were any scheduling issues. He gave an example of the most recent call he was made aware of. A crew had called in fatigued because they could not sleep at the hotel on an overnight. He said there was a function at the hotel that was loud.

Capt. Mangie said he had had an opportunity to interface with other airlines as part of the ARC process. He said he had found that DAL did not receive as many fatigue calls as some of the other airlines. He said that some airlines had their work rules eviscerated in recent years but Delta had not. He said the pilot contract at Delta allowed them to mitigate a lot of the issues that other airlines were having problems with. He said, for example, that the Delta contract had duty rigs and variable duty days which not all airlines had. He surmised that that may be one reason they did not get as many fatigue calls.

Capt. Mangie said that he had not seen any particular pattern in the type of trip or scheduling issue that resulted in fatigue calls. He said that he was not aware of anyone over at Northwest that had been working on the same issues he had been working on. He said both companies had ASAP programs and he thought the program at Northwest had been around a little longer than the one at Delta.

Capt. Mangie said that the flight crew schedules for Northwest and Delta had not been fully integrated yet. He said he was not sure which ones still needed to be integrated but he had recently started looking at A320 and A330 schedules in the past few months.

Capt. Mangie said that he was the technical advisor to IATA (International Air Transport Association) on the ICAO (International Civil Aviation Organization) FRMS (Fatigue Risk Management System) task force. He said that Delta was preparing to implement FRMS in flight operations. He said he was not sure of the time frame yet but speculated that the regulators were not yet ready for it; FAA was preparing for these programs. He said that he had been very strongly supported by his boss in these efforts.

When asked how long it takes for a recommended change to be implemented, he said it depended on how resource intensive the issue was. He said if there was something that presented an "imminent risk" then he said he could make a change overnight. He said if there was something that would require a contractual change; that would take much longer.

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Capt. Mangie said that when the company decided to fly JFK (Kennedy International Airport) to Mumbai in 2006 they started looking into fatigue issues again. He said at that time there was an operational need to address the issues. He said the effort to implement FRMS had been in the works for the past two years. He said since this incident, there had been some awareness tools put out to pilots but there had also been a lot of discussion about what they needed to do in both the short and long term. He said the bridge training CD was one example of that. He said the content of the fatigue training block being developed for that CD was driven partially by this incident. He said he would also probably update the sleep management guide a little quicker as a result of this incident.

He said he would lead pilots to the web for the basic guidance and he wanted to raise the level of awareness on three pilot operations and how they were doing business in those type operations. He said the three man operation was the bulk of their international operations and he wanted to get the word out more and use this incident as the lead in story. He said he probably would not be so specific as to use pilot incapacitation as the example but he said he wanted to make sure crews were aware that something could happen to the point where you were fatigued to the level where it impaired your judgment and something bad could happen. He said he wanted the message to get out that this incident could have happened to anybody.

He said that this incident had motivated him to get the word out on the three man operations.

Interview ended at 1700.