ATTACHMENT 1

Operational Factors Specialist Report to the IIC

Interview Summaries

DCA10IA015

Contents

1.0 Interview: Walter Scott Galland, First Officer (F/O) American Airlines

Date: December 17, 2009
Location: NTSB by phone
Time: 1100 EST

Present were: David Lawrence, Paul Misencik, Evan Byrne - National Transportation Safety Board (NTSB); Bob Hendrickson–Federal Aviation Administration (FAA) (by phone); Mike Jeffers – American Airlines (by phone); John Deleeuw – American Pilot Association (APA) (by phone)

During the interview, F/O Galland stated the following information:

His name was Walter Scott Galland and he was 51 years old. His total flight time was approximately 13, 500 hours, and 11,000 hours was in the MD80. He had approximately 1,500 pilot in command (PIC) time from his Navy career and prior to being hired by American Airlines. He never upgraded at American Airlines (AA) and he had a second class medical certificate with no limitations.

He earned his private pilot certificate in Spokane, Washington just prior to entering the Navy, where he spent 2 years in flight school. He had a total of 9 years active duty in the Navy, and left with 2,000 hours of accident and incident free flying. His date of hire at American Airlines was May 6, 1991 and he began as a flight engineer (FE) on the B727 for 9 months. He flew one trip on the DC10, and then in the spring of 1992 he trained on the MD80. He was based in Los Angeles, CA, and flew trips out of SAN (San Diego International Airport). He had never been a check airman of instructor, and has never failed a check ride.

He stated that he had flown with this captain the week prior to the incident on the same trip sequence. He had been paired with the captain at the satellite base, and had flown with him

often. He said he enjoyed flying with the captain, and had never had to file an ASAP (Aviation Safety Action Program) with him.

He stated that he received alcohol breathalyzer and drug screen test at the hotel layover, never failed a screening, and had never been treated for drug or alcohol. He said he had never been fired or terminated form a job.

He described his health as excellent, and did not take prescription or non- prescription drugs. He did not see a physician regularly, other than his yearly medical, and has no change in his health over the last year. He said he had no changes in his life either personally or financially over the last year. He stated he had no sleep problems. He had no driver's license violations.

The pairing was a 3 days on 4 days off sequence. The day of the incident was day one of a 4 day trip. The day started out of SAN at about 0945 PST[1] and flew to DFW (Dallas/Ft. Worth International Airport) had about an hour on the ground there, then flew a SAT (San Antonio International Airport) turn with 50 minutes on the ground, then returned to DFW with about a 50 minute turn time before departing to CLT (Charlotte/Douglas International Airport).

He said that on the evening of December 10, 2009 he got to bed about 2300 PST, and awoke at about 0630 PST on December 11, 2009 to help get his children to school. He said that the rest of that evening was "pretty good". On Friday December 11, 2009, he said he did a dog run, returned home and did some yard work. He said his daughter had a sleep over that evening, and they had a family movie night before going to bed around 2300 PST. He said he got up around 0700 to 0715 PST on Saturday December 12, 2009, and had a good rest the evening prior. He said his day started with cartoons for the kids, and he ran errands for Christmas before watching the Michael Jackson movie with the family on the Miramar Naval Base. He said there was nothing unusual that evening, and said he got to bed about 2230 to 2300 PST. He said he got up on Sunday December 13, 2009 because of his dog at 0530 PST and his rest was good. He had a 0845 PST report time at the SAN airport, and arrived there at about 0815 PST.

He stated that there was nothing unusual about the first few legs of the trip, as well as the SAT turn. He said the received a crew meal on the DFW-SAT flight, but ate it on the return flight. He said DFW-CLT leg was his leg based on an alternating sequence to mix things up even though they were aware of the weather in CLT. He said there were no jumpseaters from DFW to CLT and there were no MELs (minimum equipment list) or maintenance items on the aircraft. He stated that the Dallas weather was clear and cold, and the CLT weather was forecast was (he believed) ¼ mile visibility. He said the captain briefed him about the low visibility in CLT, and he did a preflight test on the Cat III auto land system on both sides of their DFGS (digital flight guidance system). When asked about the destination weather requirements prior to dispatch, he said he wasn't aware of any requirement.

He said once they were airborne, the dispatcher added ORF (Norfolk International Airport) as an alternate airport because of the CLT weather. He said the flight enroute to CLT was normal on climb out, and they began pulling up ATIS (Automated Terminal Information Service) at cruise altitude every hour. He said they began to brief the runways in CLT, and briefed both 36C and

[1] Pacific Standard Time

36R, and talked about the weather. He said they got their manuals out and used their Cat III approach procedures, including setup and approach and the possibility of a missed approach. He said they got a message from dispatch saying that he hoped their Cat III system was working, and the dispatcher started sending current RVR (runway visual range) values and reviewed weather.

He said they had plenty of fuel, but they both decided that if they had to go missed, they would proceed to BNA (Nashville International Airport). He said they finished briefing the approach several hundred miles from CLT. He stated that neither he nor the captain was high minimums, and the captain flew Cat III approaches and at the lower weather minimums, the captain would land from a Cat III approach. The first officer performed the descent, and after arriving past SHINE[2] intersection with the aircraft stabilized, he transferred control to the captain. He said they both helped set up the approach, by tuning the frequency and setting up the course. On all Cat III approaches, they set 50 feet radio altimeter. There was only one autopilot operational during the approach, and they transferred to the captain's autopilot during the transfer of control.

He said the autopilot was required for a Cat III approach, and "typically" remained on to landing rollout. On this approach, they expected to pick up the runway early, and briefed that he would disconnect the autopilot and land visually. The MD80 was auto land capable. He said on a Cat II approach an auto land was recommended, but required on a Cat III approach. To identify the localizer, they both identified each other's localizer frequency by listening to the frequency identifier. Their DME (distance measuring equipment) and marker beacons were operational, but not necessarily identified. He said he had flown into CLT 8-9 times in the last few months.

Regarding the weather, he said the weather was improving, and at first they received an RVR for 36C of 1000, and then 1400, and he recalled 1600 RVR for the right runway. He said their RVR minimum is 600 for a Cat IIIb approach. He said the tower gave them an RVR 1400, and decreasing down the runway. He said they were busy launching aircraft at the time, so there was a lot of talking on the radio.

He said of his duties as pilot monitoring (PM), out of 10,000 feet was monitoring aircraft performance and looking for traffic since the fog layer was pretty low. On the approach, he checked stable approach criteria and handled ATC (air traffic control) communications. His callouts on Cat III approaches were at 1000 feet, which was automated, and at 500 feet on the barometric altimeter he checked speed and descent rate, then off the radio altimeter at 300 feet, then at 200 feet, then automated starting at 100, then automated again at 50 and for each 10 feet remaining. At 50 feet, he called out minimums. If he saw it deviate on the approach, he calls out go-around. On the ground, he called out parameters like center line deviation. At 50 feet, he called minimums, and he expected the captain to say go-around or runway in sight landing. There was a 5 knot speed additive for this approach. At 500 feet, the call was normal, as was the 300 feet call. He then started to pick up the touchdown lights. He then heard the captain say "I got it", and looked up and saw they were slightly right of centerline, went inside for the 200 foot callout, then felt some aircraft maneuvering and saw they were slightly left of centerline with a "good amount of bank" to correct to the right. He asked the captain "you got it" and the captain responded "yea I got it". Shortly after that, he said he heard the bank angle warning which

[2] Arrival fix located 40 miles northwest of CLT on the 316 degree radial.

caught him by surprise because he did not think it was excessive. The captain leveled the wings and then they landed. He said that further out on the localizer between 1500 and 1000 feet, he noticed a "momentary vibration" in the localizer but there was no movement in the flight controls and no annunciator warnings. Limits are 1/3 movement in the localizer.

He said the flap setting was 40 degrees with the speed brakes armed. He said there was no aural warning when the autopilot disconnects other than a clicking sound when is disconnected. He did not feel anything when the autopilot disconnected. He said on the landing they were left of centerline and correcting. Tower then asked if they were on a go around, and they responded no, and then received taxi instructions. He said the aircraft nose was between the centerline and the left edge lights, and did not hear or feel anything, and the landing was normal and wasn't excessively hard. He said they used thrust reversers. At touchdown, they were calling the RVR 1400, and they landed in the first couple thousand feet of the runway. Over the approach lights, he noticed how bright the lights were and at a higher level than they normally see and they both commented on it. On the taxi in, they had a slow speed and a short taxi from the runway to the gate in low visibility.

Once at the gate, they completed the shutdown checklist. At CLT, the first officer was required to do a post flight walk around since it was not a maintenance base. He said he was concerned about the right wing down landing and when he got to the right wing he noticed some rubbing marks on the wing tip and the leading edge slat. He said a wing landing light was hanging down by a few wires. He then walked to the center of the aircraft, and quickly to the tail and left wing and then proceeded to inform the captain that they "bumped" the right wing. He said the captain originally had entered "no items" in the logbook, but corrected that when he told him. He didn't remember exactly what was written up.

He said he knew there were calls to be made, and he ran interference for the captain between him and the gate agents who were hurrying to close up the aircraft. He told the agent that they had a maintenance issue, and the airplane probably wouldn't be going out first thing in the morning. He knew there were some forms to complete, and phone calls to be made, and they wanted to complete these at the hotel. He said the forms they needed to complete were the ASAP and P2[3] forms but not until the next morning. He said they both field ASAP reports but not NASA reports.

He said they were drug tested at the hotel by a contractor at about 0230 to 0300. On the post flight, he said he believes he mentioned the landing light hanging down to the captain. He said he did a "cursory" inspection of the landing gear, and typically they walk around the entire aircraft and includes the landing gear, but he was in a hurry to get to the captain. He said the captain did not go out to view the aircraft. He says the chief pilot contacted the captain at the hotel, but the first call at the airport went to the APA (Allied Pilots Association).

He said that they see training on the Cat II and Cat III every 9 months. Typically they see normal Cat II and Cat III approaches, and also some non-normals that would require a go around. In real life, he last saw a Cat II and Cat III approach 14-15 years ago, and the last one was in LAX and another in Vancouver. He said this was the first incident he's had with American.

[3] Internal American Airlines communication network.

With regard to the weather, he said he was flying but they did a transfer of control since it was a low visibility landing, and they kept it that way even though they had low visibility, and were hoping the weather would improve. On a Cat III approach, it is a single autopilot approach and the stabilized approach criteria is airspeed +/- 5 knots, glide slope half a dot, and localizer 1/3 index, and they are in effect when descending through 300 feet. He said he did not observe these deviations from 300 feet.

He said that the pilot flying (PF) had the responsibility to call runway in sight and is primarily outside the aircraft and the F/O is inside the aircraft monitoring perimeters. He said when they were below 300 feet, he made no callout and did not notice the localizer deviation because he was correcting. When they got the bank angle alert, he did not check the bank angle since they were close to the ground and both pilots were outside. He said the auto brakes were armed and the auto throttles were engaged.

During the approach, he said no one mentioned a go around. He said he did not know they went off the runway until the next morning. He said no one considered pulling the CVR (cockpit voice recorder) circuit breaker since this was not an accident. He said the passengers commented that they had done a good job, and no negative comments. The flight attendant in the rear of the airplane stated they she noticed some corrections on the approach, and were surprised that they scrapped a wing tip.

He said fatigue could have been a factor since it was a long duty day but they weren't complaining about the job and wasn't discussed and was a standard long day.

He said that they were not immediately issued a landing clearance on check in with the tower and were well inside the approach fix (600 feet) before they were cleared to land.

He said at the 300 foot call, he was inside but when he looked up, they were right of centerline and the nose pointed to the left, and ¼ to 1/3 from centerline. At the gate, he said he did not know if anyone called the tower or ATC. He said he believed it was the chief pilot who called them at the hotel.

The interview concluded at 12:17 EST

2.0 Interview: Captain Van Duzer, American Airlines

Date: December 17, 2009
Location: NTSB by phone
Time: 1234 EST

Present were: David Lawrence, Paul Misencik, Evan Byrne - National Transportation Safety Board (NTSB); Bob Hendrickson–Federal Aviation Administration (FAA) (by phone); Mike Jeffers – American Airlines (by phone); John Deleeuw – American Pilot Association (APA) (by phone)

During the interview, Captain Van Duzer stated the following information:

He was accompanied by Ray Duke, APA. He stated his name was Greg Holmes Van Duzer and he was 58 years. He guessed that his total time was over 20,000 hours, and over 11,000 hours in the MD-80. All 11,000 hours are PIC (pilot in command) in the MD-80 and 700 hours PIC prior to American. He has a first class medical, and has holder shall possess glasses for near/intermediate vision, and he had the glasses on that flight. Prior to American, he started flying in 1968 in Cleveland, Ohio, went to Kent State and earned a degree in Aerospace technology where he also got his commercial, multi-engine and instrument ratings. After college he got his instructors rating, went to the west coast and flight instructed in Van Nuys, CA then flew otters for Golden West as F/O. He then got on with Continental in 1978 as 727 FE based in El Paso, Texas. He was furloughed, then flight instructed and then performed construction work. The then was hired by Pacific Coast Airlines flying jetstreams, and then was hired on with American on 3/28/1985.

He had never been a check airman or instructor with the airlines, and had never failed a checkride. He had flown with this F/O the week previous and numerous times over the years. He was drug and alcohol screened in the hotel room at 0500 in CLT (Charlotte, North Carolina), and had never failed a screening or been treated for abuse. He had never been fired or terminated or asked to resign.

His overall health was in "good shape"; he did not take prescription or non-prescription drugs, but did take vitamins (vitamin C and E, fish oil, calcium) and did not see a doctor regularly. He had seen a doctor regarding ankle pain last summer and was in a boot for two and a half months. There have been no changes to his health or financial situation or his personal life and "all's pretty good". He said he had no sleep issues other than recently because of this event. He has had a few speeding tickets but nothing in the last 3 years.

This trip was day one of a 3 day trip. It was a 4 leg first day, 2 leg second day, a 2 leg third day. It went SAN[4]-DFW[5]-SAT-DFW-CLT. He was based in San Diego, and lived in San Diego.

According to an interview with NTSB investigators, the captain stated that he generally went to bed around 2230 to 2300 PST[6], and got up around 0600 to 0630 PST. He said his rest was good, and he had coffee and watched the news the following morning. He did a lot of running around for Christmas on Friday December 11, 2009, completed some shopping, and got to bed that evening about 2200 to 2300 PST. On Saturday morning December 12, 2009, he rose around 0700 – 0730 PST, and said his rest was excellent. He said he worked around the house and handled things on his list, and went to bed around 2200 PST. He rose Sunday around 0600 PST, had breakfast and made a snack for the trip and left for the airport. He said he had a 0845 PST report time, left the house at 0745 PST, and signed in at the airport just prior to the 0845 PST report time.

[4] San Diego, California
[5] Dallas/Fort Worth International Airport
[6] Pacific Standard Time

The flying pilot for the DFW-CLT was the first officer, and they chose that to mix up who flew into DFW every time and it was his turn. He was scheduled to be on duty 11-12 hours that day. He says he felt a little tired after the San Antonio turn, but got off the airplane and walked around and felt fine. He said he ate in SAT, and ate on the way to CLT. There were no jumpseaters to CLT, and no MEL (minimum equipment list) issues. The weather in DFW was clear, and CLT was down to ½ mile or less, but he couldn't remember. He said the requirements for dispatch to CLT were CAT III minimums. For the flight to CLT, he knew the weather was low, so the F/O did a Cat III test of the autopilot. Enroute, they had a meal while continually reviewing weather. They discussed the weather and the fact that he would have to conduct the approach if the weather was above the F/O minimums (4000 RVR[7] or ¾ mile visibility). They briefed the approach and flew into CLT. Prior to departure, he pulled the flight plan from DECS[8] and reviewed the weather, and pulled up additional weather. He said they were checking the weather every hour, and got messages from dispatch as well, which was improving. He said they anticipated shooting the 36C and 36R approaches. They both set up their respective sides for the approach by tuning and identifying the stations, set the bugs, set the salmon bug for the touchdown zone. They chose the Cat III approach because it was a "worst case scenario", and the difference between a Cat II and Cat III was about 80 feet (130 feet versus 50 feet). He said the autopilot was required for a Cat II and Cat III. Autoland was required only for the Cat III approach. The localizer was the only radio tuned for this approach. He said the F/O was not a restricted F/O for landing minimums, and that would show up on the flight plan. He said they were just past TOC (top of climb) when they briefed the approach.

He said he had not done a Cat III approach in 9 months, or one in actual conditions in 10-12 years, so "he was a little concerned about it". He said he has flown into CLT once a week for the last month, and once this month. He said they transferred control around 11000 feet on the arrival and they switched the autopilot over from the F/O to the captain, and then reengaged the autopilot and auto throttles. The weather when they started the approach was 1400 RVR for 36C and 1600 RVR on 36R. He said his minimums for Cat III are 600/600 and advisory, but it must be reporting. He said there was no turbulence and it was smooth coming down the approach and normal. He noticed nothing unusual with the airplane on approach, and the winds were calm. On Cat III the pilot monitoring (PM) duties include callouts of altitude and airspeed, 1000, 500 speed sink, 300 feet at which time the captain incorporates an outside scan. At minimums, he made a landing or go around callout.

The airplane was gear down and flaps 40, medium brakes and the speed brakes were armed.

He said the American Airlines criteria for a stabilized approach is at 1,000 feet to be on speed and sink for VFR (visual flight rules) , and 500 feet for IFR (instrument flight rules). He said the airspeed was 165-170 to the marker, then they slowed up after switching to tower. He said the tower gave them 1400 RVR for the visibility, and the autopilot and auto throttles were on.

He noticed on the approach "twitching" a little within limits when they were just before landing clearance.

[7] Runway Visual Range
[8] Dispatch Environmental Control System

From 1000 feet, tower launched another aircraft in front of them, and they did not get a landing clearance until 600 feet. After the 300 foot call, he looked outside, noticed they were off centerline, made a correction, and landed.

He said he disconnected the autopilot sometime below 300 feet prior to making his correction and did not feel anything abnormal when he disconnected the autopilot. He said that he called "I have it" or something to that effect when he disconnected the autopilot. When asked why he disconnected the autopilot, he said he had not flown an autoland in 10-12 years or one in the simulator in 9 months, he did not feel comfortable with it and thought it was the right thing to do at the time. He did not consider a go around. When he disconnected the autopilot, he saw the VASI (visual approach slope indicator) and approach lights and touchdown zone lights. He said he did brief a go around prior to the approach. While hand flying the aircraft, he felt he had it lined up well, heard "bank angle", lined the aircraft up and landed left of centerline 1500 to 2000 feet down the runway. He did not believe the aircraft touched down in a bank.

He said that it was a big "white out" when they were over the runway, but had a good feel for the bank angle when he disconnected the autopilot. After touchdown, he believed the visibility was about 1400 RVR and could see the turn off ahead of him. Tower asked them if they wanted to go around, and he said no "they were already on the deck". They taxied in to the gate, and didn't feel anything was wrong with the aircraft, and shutdown the aircraft.

He said that on a Cat III approach, you are required to auto land the aircraft.

After the passengers got off, the first officer finished his walk around and then advised him there was damage to the aircraft, and he got a cold sweat over himself. He did not know what to do next and called the Allied Pilots Association (APA) to get guidance.

He made an entry into the logbook about the damage. He said opposed to handling this in the jetway, he wanted to get to the hotel so he could get his manual out to figure what to do. While at the front desk at the hotel, he got a call from the chief pilot on duty. The first officer said there was wingtip, slat, and landing light damage, but he didn't go out to look himself. Regarding the CVR (cockpit voice recorder), in the event of an accident AA requires the CB (circuit breaker) be pulled, but he didn't believe this was an accident. He said the passengers said thank you and great job on arrival. The F/As (flight attendants) asked if it was an auto land because of the weather, and he said it wasn't. When he first learned about the damage, he only called APA first but wanted to get away from the crowd and to the hotel to reference his manual.

He said the chief pilot called him about 25 minutes later when they were at the hotel, who told him that SOC (Systems Operations Control) advised him of an incident and asked him what happened. He gave the chief pilot a brief description and the chief pilot said he would get back to him. He said both filed ASAP reports and P2 reports, which is similar to the ASAP report and goes to the company. He said he did not recall how much fuel was onboard at arrival. He said they would plan only one approach, then they were "off to BNA".

He said the first officer was a strong individual, good pilot and good person. Regarding the Cat II and Cat III training, in training they did introduce abnormals during the approach. He said he had never experienced anything like this on a Cat II or Cat III approach before.

He said the bank angle alert came on around 45 degrees and decreased at lower altitude, and heard the aural alert at 10 degrees bank at 30 to 32 feet. He said at in hindsight, at the first twitch of the localizer, he would have gone to BNA.

When he reviewed the Cat III procedures after the event, he said it was scattered between several manuals, and in different locations in one manual, and would suggest getting it all in one manual since they fly these approaches so rarely, you may miss something by using several manuals.

He said on touchdown, he did not notice any aircraft taxing out, but heard them launch 3-4 aircraft when they were inside the marker (4-5 miles out).

Regarding his foot injury, he said it was his left foot, but did not report it to his AME (Aviation Medical Examiner) since it was after his previous medical, and had been a long standing issue that was now healed. When on the approach, he said the first officer never mentioned any deviations. He said the fog layer was low and did not know the tops of the clouds but believed he intercepted the localizer above the deck. When they transferred control at 11,000, the first officer began talking to air traffic control from that point on. He said it was the first officer's turn to fly, and even though the weather was low, he allowed the first officer to fly the take off.

He said when he acquired the runway environment on the approach to CLT, they were slightly right of centerline, nose pointed left and drifting left, but he did not know how much deviation to the right they were.

He said the bank angle alert was an unusual control position.

He said he believed there were other aircraft being launched while they were inside the marker, and he was concerned about it but didn't question ATC (air traffic control). He said while they were on the downwind approach, he could see other aircraft departing. He said after the incident, he had not received any additional training and there was an ASAP review, and possible training in the future.

Interview concluded at 1347 eastern standard time.

3.0 Interview: Michael Dewey Jeffers, Jr., MD-80 Fleet Captain – American Airlines (AA)

Date: January 19, 2010
Location: American Airlines Flight Operations Center, Dallas, Texas
Time: 0910 CST
Present were: David Lawrence, Katherine Wilson - National Transportation Safety Board (NTSB)
Represented by: D. Douglas Cotton, American Airlines Senior Attorney

During the interview Captain Jeffers stated the following:

He was 49 years old. He was hired as the Fleet Captain on November 1, 2009. Prior to that he was an MD-80 check airman, both in the simulator and on the line, for all seats all types (X Type). He said he that he had been in that position since March 1, 2009. Prior to being a check airman, he was an MD-80 captain. He was originally hired by TWA in October 1985 and was upgraded to captain on the MD-80 in November 1997. He became a check airman with TWA in July 1998. He was also a check airman on the B727 and L-1011. He was a lead check airman with TWA at the time it was purchased by AA.

He said his job responsibilities included ensuring the manuals were up to date and correct. This included all the manuals that the crews dealt with, including minimum equipment list (MEL). His job also included ensuring timely compliance with airworthiness directives (ADs), proper communication with Federal Aviation Administration (FAA), overseeing line check airman, any modifications done on the airplane, ensuring timely compliance, work with R.D. Johnson (the MD80 Fleet training Manager) and line check airmen on proper policies and procedures.

He said his boss was the Managing Director of Flight Operations, and was assisted by Jerry Bauckman, the MD80 Fleet Specialist directly assigned to him. He said there are other assistants but they are also assigned to other fleets.

He said he did not know flight crew for AA1402.

He said that the CRM (Crew Resource Management) and fatigue management programs were a ground school function and under direction of Ed Ferrell, MD80 Fleet Ground School Supervisor, who oversees all programs the crews are taught. He was not sure how often they go through that program.

He said he last saw CRM in recurrent training class and it was a videotaped module. There was a human factors class that was given every 9 months. He said their training program was under AQP (Advanced Qualification Program).

He said included in human factors class was past incidents and accidents, as well as talk about relationship between crews such as CRM issues. He said the original CRM class was a separate class and then there was a human factors class every 9 months. I covered topics like where to go if you are having problems, operational excellence with airline, and fuel efficiency. He said a lot of time was designated with events that had happened in the airline which were reviewed with the crew, then talked about how it could have been handled better or what was good about it. Fuel efficiency was discussed in terms of initiatives that airline wanted the crew to do such as single engine taxi.

He was not sure if they taught threat and error management, but could check on it.

He said the MD80 is Cat III qualified to 600 RVR.

He said the training is conducted everywhere from ground school to simulator training, including initial and continuing qualification, and every 9 months for currently qualified crews in CQT (Continuing Qualification Training).

Regarding the tracking of training, he said they were certified every 9 months and it was entered into their FAST system. He said it was a certification that they got every 9 months by a simulator instructor and/or check airman on first day of CQT.

He said the conduct Cat III approaches in initial training, and was not sure how many approaches the crews saw, but "it was a lot". In recurrent training it was either 3 or 4 Cat III approaches. He said "non-normals" were included on the first day. Cat III approaches with an abnormal situation were given to execute a missed approach and then a Cat III approach to landing with an auto-land was given, which was needed for qualification. On the second day, the check airman had the option of having the crew conduct a Cat III and/or Cat II approach to a landing.

He said the simulator is scripted in terms of what they wanted them to do, but how it was handled was at the instructor's discretion.

He said what was typically done was a localizer signal interference below 200' and the crew would get a localizer tracking problem to get F/O to command go around. He was looking on PFD (primary flight display), and was taught to do a scan of his PFD for certain tracking parameters like 1/3 of dot off the localizer, ½ of dot of the glideslope, and airspeed +/- 5 knots. If not within these parameters they would go around. The F/O would see this happen, but if airplane got to minimums, then the captain would execute go around. He said they could also see a malfunction with an on board system with a flag that the captain would not see it. He said the F/O could call the go around, and did not have to explain why.

When asked how the crew would know there as a malfunction of the autoland system, he said they had certain FMA (flight mode annunciator) cues that they were looking for, for instance if aircraft did not go into a parallel rudder.

He said at 1500' altitude, the airplane tested the autoland system. He said this information was info in the Operating Manual Volume 1.

He said autoland on Cat II approaches were recommend down to 1200 RVR, and at 1000 RVR it was required. He said that Cat III approaches are required to autoland with no option to hand fly to the landing.

He said both navigation radios were tuned to the same ILS (instrument landing system) frequency, and the course must be within 2 degrees. The navigation switch was used to identify the radios, and each crew member set their own radios.

He said the captain flies and lands Cat II and Cat III approaches and everything under 4000 RVR and ¾ mile visibility. He said this was a fleet wide limitation.

He said crews typically briefed what was in the book, and the briefing was evaluated when the crews came in for simulator training.

As captain, the call outs would be (after he would push land button), say "track/track, "auto go", "autoland". At 500' the F/O would call sink rate. At the 300' ft call by F/O both would cross check tracking of airplane. At 200' both look for the align light on flight mode annunciator (FMA) and they must be aligned by the 100' ft call from the F/O. The F/O would call out minimums at 50'. The Captain was required to say "go around" or "landing" at 50'. The F/O should not expect to hear anything from captain besides these two callouts at 50'.

He said they typically do not brief "I will execute a go around for XYZ."

He said the MD80 goes in flare mode and then the throttles would "auto retard". If it did not, the autopilot would disconnect.

If a fail flag illuminated on the navigation radios, they could do a go around even within 1/3 of the localizer, ½ dot glideslope and within 5 knots of target speed.

He said flaps for Cat II approaches are 28 or 40 degrees at pilot's discretion and the difference was about 5 knots of speed and a little nose higher. He would typically do 40 flaps, but guidance was in the operating manual. Crews are trained to land at flaps 40.

He said the autoland system would look for the aircraft to meet certain criteria. He said the "Land" light would flash if something was not what was expected. At 300', the autopilot would kick off if the appropriate criteria were not met.

Regarding the flight confidence checks (FCC), they would ensure an aircraft had an autoland logged on it every 60 days, and this was tracked by maintenance. If aircraft exceeded 60 days, it would lose its autoland currency and then would require an FCC before any Cat III approach could be done. He said the crew would get a notification in flight plan/dispatch release and also in log book if the aircraft was not current. Parameters for the FCC are outlined in flight manual. He said that FCCs were required to be flown down to an autoland.

He said they encouraged crews to do FCCs for their own confidence in the autoland system of the airplane, but there was no requirement to do it. He said the flight manual said to do it once a month.

He said the MD80 had a fail/passive autoland system that would disconnect the autopilot if a system failed.

He said that roll out guidance was not available in Charlotte on runway 36C. He stated that the MD80 was not allowed to do a Cat III approach on that runway, but they could shoot a Cat II approach if that note is there. He said an autoland was not allowed on that runway.

He stated that his total time was 18,000 hours, and he had 7000 hours on the MD80, all as captain. He said the Fleet Training Manager prior to him was RD Johnson.

He said they taught fatigue in their human factors course, and it usually referenced past accidents and incidents.

He said he flew the line at least once a week.

He said they conducted a flight incident review with the crew, and it was pretty clear on what happened. In closing, he said he felt their training "is superb".

Interview ended at 1010 CST.

4.0 Interview: Robert David Johnson, MD-80 Fleet Training Manager – American Airlines (AA)

Date: January 19, 2010
Location: American Airlines Flight Operations Center, Dallas, Texas
Time: 1025 CST
Present were: David Lawrence, Katherine Wilson - National Transportation Safety Board (NTSB)
Represented by: D. Douglas Cotton, American Airlines Senior Attorney

During his interview, Captain Johnson stated the following:

He said he was 55 years old and was hired by American Airlines in October 1984. He said prior to AA, he flew fighters and trainers in Air Force, and retired this year with 31 years. At AA he flew the Boeing 727 as a flight engineer (F/E), the "Super" 80 as a co pilot, the Boeing 767 as a copilot, and the MD as a captain. His total time was 13000 hours, with 6800 hours in the MD80. He said he had been in his current position since January, 2009. He said Joe Kohn had the position before him but left to be a Boeing 777 check airman.

He stated he was responsible for the check airman, simulator pilots, ground school instructors, curriculum of fleet, training, and standardization of the fleet. His boss was Captain Bill Burns – Manager Flight Training. He had 28 check airmen under him, operationally 15 simulator pilots, and 10 ground school instructors though they were assigned to another manager. Ground school instructors did not have to be a pilot or navigator but most of them were. Simulator pilots were all ATPs (airline transport pilot) and typed in MD80, but did not need a current medical. He said there was no "maneuvers validation", and all evaluation was done by the check airman. He said they had one primary APM (Aircrew Program Manager) and one Assistant APM, and it varied how often he would see them.

He said he had seen the captain before but was not sure from where. He may have flown with him or been in a class with him. He said he had been a check airman for 10 years.

He said that CRM and fatigue management was trained at American Airlines. CRM was taught as a part of human factors. He said they had 15-16 instructors who taught that. Fatigue had been

taught in human factors. He was not sure how often it was taught because he had not been involved in it for awhile. He said threat and error management was not taught, but discussed.

He said his last flight was Sunday, and he does fly a lot. He went through CQT (Continuing Qualification Training) in July. Human factors was included.

He said Cat III training was conducted in initial with the simulator and a check airman and validated on day 7 with a check airman. He said it was evaluated during maneuvers validation in initial training. In recurrent it was trained in RTS (recurrent training simulator) and evaluated in maneuvers validation in R18 (18 month recurrent visit).

He said they had to see a missed approach, and would have to see some abnormal on low visibility approaches. They had about 5 abnormals that we can use like rudder restriction, or failure of the autoland system. He there are 3 touchdown/decision points that we could fail: failure of the align or flare mode, failure of the autothrottles, and a misalignment for the localizer inside about 100' AGL (above ground level) that would give a shift of the localizer (he was not sure if the autopilot followed the shift because it was not something he looked for since he only monitored the parameters). He had probably done about 200 Cat III approaches, but not all down to minimums.

He did not know about fail/passive autoland systems, but said the Cat II autoland is not required but recommended, while the Cat III autoland was required.

He said Cat III training was also introduced in IOE (initial operating experience) and it could be done on a Cat I, II, or III runway.

He said Cat III approaches were done every 9 months in simulator training, and they did flight confidence checks (FCC) as a maneuver done in conjunction with the FAA (Federal Aviation Administration) to revalidate the autoland system. An FCC was tracked by maintenance in Tulsa and would come up on the flight plan if it was current or not. He said it would tell you if you were approaching the 60 day limit. If outside of 60 days, the autoland system was out of minimums (LMP status). If the aircraft needed an FCC, it must be a Cat III certified crew and they would need to have the right conditions (recommendations like daytime, ILS critical zone protected, no wet runways for practices, gusty winds, all of which are provided in Volume 1 in FCC section) and the correct runway. Autoland was required to complete an FCC certification.

He said HI6 messages were a methodology they use by intercompany email that could be seen when pilots log in to the computer system. He said they requested that pilots do Cat III approaches to remain current. He said they also put out an FCC confidence bulletin. Bulletins were located in the publications area in operations.

He could not explain what a fail/passive autoland system was.

He said they had a no fault go around policy. He said they would allow it to happen in their fail/passive system, and sometimes they introduced conditions that allowed them to go around. He said either pilot could call for a go around. F/Os were given the opportunity to call for a go

around during training. On a Cat III, go arounds were required for losing/exceeding parameters or failure of autopilot system, or a ground equipment malfunction. He said if the F/O called for go around, the captain would do it.

He said that on a Cat III approach, the captain should not make any other call outs from 1000' to minimums. At 1000' regardless of approach, they were required to be configured with landing gear and flaps down. In VFR they were required to be stable by 500', and in IFR by 1000', on speed stabilized and throttles spooled up. He said they had been emphasizing this for about 5 years. He said they had a great chart up in the briefing rooms and the recurrent classrooms for stabilized approaches that used green, yellow and red rings.

He said that if there is a no roll out note on the Jeppesen chart, then no Cat III approach is allowed. He said pre and post incident messages were sent out to the crews. F4 message and HI6 messages were also sent to pilots.

When asked what was included in the human factors curriculum, he said it was mainly safety and hanger flying, and the evacuation at LAX (Los Angeles International Airport) was included. He said CRM was included, but could not recall if fatigue training was included.

He said he didn't see any gaps in Cat II and Cat III training of procedures. He added "can we always get better, absolutely."

Interview ended at 1100.

5.0 Interview: John Thomas Manly, MD-80 Captain and Check Airman – American Airlines (AA)

Date: January 19, 2010
Location: American Airlines Flight Operations Center, Dallas, Texas
Time: 1110 CST
Present were: David Lawrence, Katherine Wilson - National Transportation Safety Board (NTSB)
Represented by: D. Douglas Cotton, American Airlines Senior Attorney

During the interview, Captain Manly stated the following:

He was 58 years old and currently a check airman on the MD80. His total time was over 20,000 hours and 8,500 to 9,000 hours in the MD80, of which all but 2,500 hours were as pilot in command (PIC). He began his career at American Airlines in 1986 after first flying with Air Cal prior to the acquisition by American. He said he became an APD (Aircrew Program Designee) about 10 years ago.

He said David Smith is the APM (Aircrew Program Manager) and was not sure if his assistant was an APM or not. He said Mr. Smith came to every standards meeting, which was quarterly,

and before each meeting he would meet with the designees. He said he could not recall having a specific meeting since incident.

He said he did not know the captain but had seen the F/O before, but was not sure where.

He said RD Johnson was his boss in the training department. He said RD communicated with them continuously, but there had been nothing specific since incident flight. He said they had a conference call where some generalities were discussed but was not sure if any specifics of Cat III occurred on that call.

Capt. Manly said he instructed the check airman. He had a three day with them the past weekend. He said it was a standard AA recurrent training and then an additional day in simulator for Check airman to ensure they could do all of the maneuvers from the right seat.

He said he had done Cat III more often than others because he performed IOEs (initial operating experience).

Regarding how Cat III approaches were trained in simulator, he said there was a standard list of things to train on in terms of abnormal. He said nothing was scripted but they all taught the same abnormal buttons like misaligned localizer deviation, etc.

He said they taught a scan of the instruments for the F/O, and that an F/O "makes or breaks a Cat III." Once the captain went outside, the whole instrument approach success fell on the F/O. The captain looked out at 300' (first time he is allowed to go outside), then he came back in. Once aligned at about 150', he went back outside and stayed outside. At minimums, the captain could make one of two callouts – "landing" or "go around."

He said he taught go arounds by: TOGA[9], flaps 15, heading select, then NAV (navigation) at 1,000' AGL (above ground level). He said they could not train go arounds during IOE because they had passengers onboard.

He said that American had a "no fault" go around policy. He said they might call the crew but there were no consequences.

He said all Cat III approaches were to an autoland. Cat II approaches had to be coupled to minimums but there were times when could not autoland such as equipment failure. He said it was recommended to autoland for Cat II approaches unless you were restricted.

He said they used to push landing flaps 40, but crews could use flaps 28 or 40, and they tried not to push one or the other.

He said they encouraged crews to fly Cat III approaches. He said they have even given them a little "push" because if they got an airplane that was not certified for autoland, and you did an FCC and then it failed the FCC, the airplane was grounded because the autopilot was placed on

[9] "Takeoff/Go Around"

MEL (minimum equipment list). He said if the aircraft did not autoland on an FCC, the crew was required to do a P2 report.

He said that a manual landing would never occur on a Cat III approach.

Regarding the roll out restriction in CLT (Charlotte/Douglas International Airport), he said an HI6 message was sent out post-incident indicating that they would not conduct Cat III approaches to runways with that note on there.

He said they did not fail Cat III approaches very often in simulator or on the FCC check.

He said "I got it" was a non standard call at minimums. He said the captain should only call "go around" or "landing."

Interview ended at 1137 CST.