NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Washington, D.C. 20594

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Interview Summaries

Addendum 1

OPERATIONAL FACTORS/HUMAN PERFORMANCE SUPPORT TO THE U.S. ACCREDITED REPRESENTATIVE

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A. ACCIDENT

Operator: United Parcel Service (UPS) Flight 6
Location: Dubai, United Arab Emirates
Date: September 3, 2010
Airplane: Boeing 747-400

B. SUMMARY

On September 3, 2010 at about 8:10 pm local time (1610 UTC[1]), UPS Flight 6, a Boeing 747-400F (N571UP), crashed while attempting an emergency landing at Dubai International Airport (DXB), Dubai, United Arab Emirates (UAE). The flight had departed from Dubai approximately 45-minutes earlier enroute to Cologne, Germany, and returned after the crew declared an emergency and reported smoke and fire. The airplane impacted inside an Emirati army post, approximately 9 miles from Dubai's international airport. The two flight crew members were fatally injured, there were no ground injuries, and the airplane was destroyed by impact and fire. The investigation is being led by the UAE General Civil Aviation Authority (GCAA).

C. INTERVIEW SUMMARIES

1.0 Interview: Bill King, Federal Aviation Administration (FAA)

Date: November 8, 2010
Location: Via Conference Call
Time: 1030 EST

[1] Coordinated Universal Time

Present were: Captain David Lawrence - NTSB; Dr. Katherine Wilson – NTSB; Mr. Eric West – Federal Aviation Administration (FAA), Mr. Brad Preamble – FAA; Captain Martin Hinshaw – Independent Pilots Association (IPA).

During the interview, Mr. King stated the following information:

His name was William H. King, and he was 63 years old. His title was the Assistant Principle Operations Inspector (APOI) for UPS, and had been at that position for about 2 years. Previously, he served as the Aircrew Program Manager (APM) on the B747-400 from late 2007 to early 2009. He had been employed by the FAA for about 8 and one half years. Before joining the FAA, he was a Director of Operations for a B727 domestic carrier for 8 years. He also was the Director of Operations for West States Airlines. He had flown Part 135 Lear operations in the past, and once flew for Frontier Airlines back in 1975.

He was a current B747-400 rated pilot, and also held ratings in the B747-100/200 "classic", the B727, the Lear Jet, CV580, CV440, and N262. He had about 14,000 total flight hours.

His role as the APOI was at the direction of the POI (Principle Operations Inspector), and as certification project manager for the various projects that came across the certification office, similar to Hudson Bay ADS-B[2] project and special arrival considerations in Alaska. He also worked on the AQP program development on the B747-400, as well as oversight of equipment modifications on the B747-400. He was involved with the validation and approval flights on the B747-400.

He stayed current on the B747-400 through the FAA 40-40 program. His initial training on the B747-400 was through Boeing, and he received his B747-100 training at UPS through a MOU[3]. He also maintained his engineer's certification. He also attended a recurrent program on the B747-400 in March of 2010, which was proficiency training (PT). There was no smoke, fire and fumes training in that particular session. He said he had seen smoke training in the simulator about a year ago, and the masks were used and a diversion was required.

As the Certification Project Manager, he worked as a "focal point" with an industry certification project manager. The FAA project manager then coordinated with different disciplines within the FAA for the certification of the aircraft.

As program manager, he said there were no difficulties bringing the aircraft onto the UPS certificate. He said most of the "hiccups" were not on the operations side, and normally they occur on the airworthiness side. He said they initially had problems with the MSM (maintenance specifications manual) when they assigned a new project manager on the UPS side, but that got straightened out.

He said the O2 masks on the B747-400's that were delivered to UPS were installed at Boeing.

[2] Automatic dependent surveillance-broadcast (ADS-B) - A cooperative surveillance technique for air traffic control and related applications being developed as part of the Next Generation Air Transportation System (NextGen).
[3] Memorandum of understanding.

He said the full face mask was a part of the Boeing "build set", and was an option for installation, but UPS "opted" to standardize the fleet with the 757/767 and not have the full face mask. He said that decision was made by the aircraft acquisitions group at UPS.

He said he was not familiar with the F/O for UPS6, but knew the Captain. He did observe the Captain get his type rating on the 747 classic, and he assumed he did fine since he signed him off.

He said he had spent the last two months doing 747-400 observations, and had not been in the office much.

He learned of the accident by a phone call he received from the POI. He said a group was assembled at the Global Operations Center (GOC), and he began assembling documents. During that time, he said they got "cut off" from obtaining additional information.

He had not had an opportunity to review the training records of either pilot, and had not received any information about the pilot's training.

He said he participated in the emergency training at UPS, and they receive live fire training during initial but not during recurrent. Pilots were taught the use of the portable oxygen bottle during training, but not to use the portable oxygen bottle to fight a fire and instead use a PBE with a halon bottle to fight a fire. He said they were graded on how well they can direct the extinguisher at a simulated fire source.

He said UPS crews were taught to fight a fire only in the upper deck area because it was a two pilot airplane. He said there "was a prohibition to fighting a fire in flight on the main deck because it would require opening the door to the main deck, and that was the smoke door."

He said the wand on the main deck was used when there were extra personnel "like DOD[4] personnel" that were down on the main deck monitoring the cargo, and could be used to help suppress, but not extinguish a fire by reaching over to the other side of the aircraft. These persons were briefed on the emergency equipment and the wand.

Regarding pilot monitoring duties that included working the radios and MCP[5] inputs while also reading the checklist, he said it was the UPS policy to "download" the PM duties if required by taking over such duties based upon "task saturation". He said this occurred less frequently on the 747-400 because of the high level of automation, and was more common "on the classic" because of the more "manual" nature of flying that aircraft. The SOP[6] was for the PM to run the checklist and handle the radios as well, and that was all a part of their CRM[7] program. He said UPS did it that way because the SOP would cover "99% of the operation, and why would you want to depart from that?" He said under normal circumstances, that was how the duties were divided, and to depart from that in an abnormal situation "would only cause confusion." He said

[4] Department of Defense
[5] Mode Control Panel
[6] Standard Operating Procedure
[7] Crew Resource Management

"you create a standard for 99% of your flying, and that's what they have done." He said it was always the captain's authority to "download" radio calls when the checklist was run. This was the policy at UPS when he first came there, and he did not know if there was any research done to look at other carriers "best practices" regarding PM/PF duties.

He said he was not familiar with the EVAS[8] system, but had seen it in small general aviation circumstances but not in commercial applications. He was not sure if the system was even certified for use on the B747-400.

He said the difference from the AFM[9] and the UPS non-normal checklist should be addressed with the AEG (aircraft evaluation group) office. He said there was no review process to compare the AFM with the non-normal checklists. He said the review process takes place only if it differs from the QRH[10], and in this case it did not.

He said the B747-400 was not yet under AQP, but they hoped to be "January 1st" 2011. Small group trials were to begin November 29, 2010. He said the program manager was in ANC (Anchorage, Alaska) working on the development. He said this was his first involvement with an AQP[11] program, and was working with the UPS AQP program manager. He said UPS had considered a LOSA[12] program, but had not implemented the program, and did not know why it was not implemented. He said he saw FOQA[13] and ASAP data via quarterly reports and meetings, and noticed that the trends were toward improvements in the training programs. He thought the oversight by the POI on the UPS training program had helped them.

He said he during the months of July and August, he was out on observations of the line check airmen, along with 3 APD[14] certifications. He tried to get out several times a year "on their DOD programs", and tried to combine as much flying as he could because of funding constraints.

When the pilots require a "bio-break" in flight, he said the pilots would announce their need, provide a briefing to the other pilot, don the O2 mask and turn on the intercom over the speaker. After the pilot returned from the bio break, the other pilot would remove his O2 mask and brief any changes or say "no changes". He said the pilots he had observed were always using 100%. He said the switch on the front of the mask "rotates", and the switch was visible during a preflight, and the selector was visible and would rotate. He said the cockpit preflight of the mask requirement to 100% was a checklist "of sorts", and specifically said to set it at 100%.

He said he had seen the same division of duties used by UPS for PM and PF at other airlines.

[8] Emergency Vision Assurance System
[9] Airplane Flight Manual
[10] Quick Reference Manual
[11] Advanced Qualification Program
[12] Line Operations Safety Audit
[13] Flight Operations Quality Assurance
[14] Aircrew Program Designee

He said he left the position of APM on the B747-400 when he was offered the position of assistant POI. He said his decision was not financially based and the new position required more work, but he enjoyed it.

He said when he received training in the simulator at Boeing in Seattle, he physically moved the smoke vent on the O2 masks to simulate clearing the goggles. He said he had observed UPS training its crews on the mask vents and googles during the initial simulator training. He said the smoke evacuation handle was discussed in ground school and briefings before they got in the simulator, and the simulator "was of no value" since there was no smoke in the simulator. He said the smoke event checklist "was very long".

He said he had no concerns about the UPS training of smoke, fire and fumes events "because it was exactly how Boeing trained it".

He said he had never used a full face mask because he was not on the Airbus at UPS, and the other carriers he flew for did not have them. He said during a simple decompression, he would rather have what UPS had now, but during a smoke event he would "maybe rather have the other one."

He said he once flew for a Part 135 freight operation out of Salt Lake City.

To his knowledge, UPS had never trained using a smoke generation simulator, but they had recently discussed it since the UPS6 accident.

He said the only change at UPS since the accident was the creation of a working group to look at possible checklist changes with Boeing.

Interview concluded at 11:45 EST.

2.0 Interview: Larry Ortkiese, UPS Principle Operations Inspector (POI), FAA

Date: November 8, 2010
Location: Via Conference Call
Time: 1150 EST

Present were: Captain David Lawrence - NTSB; Dr. Katherine Wilson – NTSB; Mr. Eric West – Federal Aviation Administration (FAA), Mr. Brad Preamble – FAA; Captain Martin Hinshaw – Independent Pilots Association (IPA).

During the follow-up interview, Mr. Ortkiese stated the following:

He said that if UPS came to him to alter a non-normal checklist, he would follow a 5 phase process. He said they would meet with the company to have the "same perception of what to accomplish". He said they would then simply follow the handbook for the process.

He said if there was a difference in the FAA approved AFM and a non-normal procedure UPS was using, he did not believe there was a process to compare the two after the checklist was approved by the AEG[15] since it was an approved Boeing document. He said they accept the Boeing product as an approved document since it had already gone through the AEG to get approved.

He said there was no review process to look at the AFM and compare it to the existing non-normals used by UPS.

Interview concluded at 12:00 EST.

3.0 Interview: John Morris, Boeing 747-400 Captain, UPS

Date: November 9, 2010
Location: Via Conference Call
Time: 1300 EST

Present were: Captain David Lawrence - NTSB; Dr. Katherine Wilson – NTSB; Captain Ed Horne – UPS.

In the interview, Capt. Morris stated the following:

He was 64 years old. He had flown the B-747-400 for about 2 years in December 2010 and had been with UPS since February 1988. His career at UPS included being a first officer and then a captain on the DC-8 for 10-11 years, he flew the 75/76 for about 7 years, when he turned 60 years old he became a flight engineer on the DC-8 for 2 years, and then he became a captain on the B-747-400. He had about 14,000 hours total time, and 650 hours on the B-747-400 which was all PIC.

Capt. Morris flew the accident airplane in to DXB on the afternoon of the accident, arriving about 1500 local time. The flight departed Hong Kong in late morning and was an all daytime flight. There were no issues with the loading. The flight blocked out on scheduled so there were no issues of performance for the loaders. The crew did not receive any notifications documents to alert them about hazardous materials on board. He said it was routine and standard. He said that during the taxi, after turning from a parallel taxiway to the taxiway at the end of the runway, they received a body gear steering EICAS[16] alert message because they completed the turn but did not roll out to allow the body gear to center itself. When they rolled out, the message went away. The message did become noticeable as a status message as they came in to DXB. Takeoff and climbout was normal. The crew received a Pack 1 EICAS message late in the climbout. After leveling off at their cruise altitude, the crew got the QRH and went through the procedure for the pack EICAS message. The procedure stated to manually selected the A controller, reset the system and see if it operates normally. The crew did this. While in cruise flight, the message reappeared. The procedure called for the crew to select the B controller, reset the system and see

[15] Airplane Evaluation Group
[16] Engine Indicating and Crew Alerting System

if it operates that way, which it did. The message did not reappear during the remainder of the flight. The crew wrote this up in the maintenance logbook when they arrived in DXB. He said everything else was as scheduled and a normal operation. After landing in DXB, the captain relayed what occurred to the mechanic who came up on the flight deck, although he did not recall to which mechanic. He did not believe that the mechanic made any comments to him about the issue. The crew deplaned and proceeded to the hotel.

Capt. Morris said he and the first officer exited their seats during the flight for "crew comfort". He said if there was not another pilot available to take that crewmember's position who vacated, the other pilot would don the oxygen mask. There were jumpseaters on the aircraft and he thought they might have been up in the cockpit during this time to sit in the seat, however, he thought both he and the first officer donned their oxygen masks during the flight. He said his oxygen mask would have been set to 'normal', which was "absolutely" normal. The mask would be set to 100% when directed to do so by a procedure they were performing; For example, when smoke or fumes were present the first thing a crew would do is don the oxygen mask and set it to 100% to prevent ambient air from entering.

Crews are required to preflight the oxygen mask and the thought it was at 100% when they preflight it.

Capt. Morris had a simulator session with Capt. Lampe "earlier in the year". He did not recall anything about the session itself but said it was a PT and they were both captains and took turns being the PF and PNF. He did not recall anything unusual and he had to be reminded that he had the session with him. He did not recall a SFF[17] event during the session or other events they had, and he did not recall the last time he had received a SFF event. He said the company had emphasized SFF throughout his entire time at UPS. He said there was a portion of every training event xxx and there was greater emphasis in training after the DC-8 incident.

He said crews were trained to use the fire extinguisher every year. It was a simulated fire, not a live fire. They did not prepare for fighting a fire on the main deck, but in the unlikely event, it was possible with the right PBE[18] equipment for a crewmember to go down to the deck and get more familiar with what the event was down there. They did not receive training on how to use the Halon extinguisher with the extension; it was just mentioned and he did not have confidence that he was trained to do so.

He had never experienced an event requiring him to don the oxygen mask and goggles in flight on the B-747-400.

Regarding preflight of the smoke goggles, he said pilots made sure the goggles were in their proper position and most would open up the envelop a little bit to make sure they were in there. He did not 100% take them out of the envelop himself to look at them.

[17] Smoke Fire Fumes
[18] Protective Breathing Equipment

He said most of the fleets carried maintenance write-ups on a pretty average basis that they would be made aware of through the preflight paperwork but he did not specifically recall any prior to leaving Hong Kong.

The flight from Hong Kong to DXB was about 7.5 hours. He did not recall the number of breaks that were taken by the crew. He said the number depended on the compliment on board in terms of jumpseaters on board. It typically was not a bare crew on board. Jumpseaters were able to help with meal services and such and that would influence directly the number of "out of seat events" they would have.

Capt. Morris said the advantage of using the normal versus 100% oxygen setting on the mask was that normal was a mix of ambient air and 100% oxygen. From his personal standpoint, he said for his comfort level, the less time he spent on 100% oxygen the less ear problems he would have later on. He said he would always use normal if he had a choice. He was not sure what other pilots did. From his military background, he would prefer to not be on 100% oxygen. He said it was hard to get the mask back in the compartment so on an extended duration like from Hong Kong to DXB, he would coil the hose back in the compartment so it was not in the way and he might have the mask in the compartment but not have the doors as smoothly closed as they would be otherwise. He would have to be careful not to activate the mic function. Because the crew would get up multiple times, it was easier to do that. He would put the mask back in the housing and close the doors at the end of the flight and always at that time would turn the mask setting back to 100% for the next preflight.

He did not recall if he had ever found a mask set to normal during the preflight.

He did not recall the initial altitude for level off out of Hong Kong. He had a vague recollection that it was in the high 20s.

Crews would preflight the oxygen mask at 100%.

The first officer on the Hong Kong to DXB flight was Bruce Anderson. He did not recall if F/O Anderson donned his oxygen mask, but was fairly certain that he did.

He did not recall any issues with their oxygen masks during the flight.

He said F/O Anderson did the preflight of the upper deck.

The interview ended 1334 EST.

4.0 Interview: Bruce Anderson, Boeing 747-400 First Officer (F/O)

Date: November 12, 2010
Location: Via Conference Call
Time: 1300 EST

Present were: Captain David Lawrence - NTSB; Dr. Katherine Wilson – NTSB; Martin Hinshaw – IPA, Mr. Paul Vislosky - IPA.

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

His name was Bruce Keahi Anderson, and he was 44 years old. His date of hire with UPS was January 16, 2007. He had flown the MD-11 prior to the Boeing 747-400. His total time was about 4000 hours, and he had about 600 hours on the B747-400, and began flying the aircraft in October, 2008

Prior to UPS, he was active duty in the Air Force flying KC-135's from 1994 to 1999. He transitioned to Air Force Reserve flying C-5's. He had also flown smaller aircraft privately.

He said he flew UPS 6 as F/O from Hong Kong to Dubai. He said it was a basic crew of two pilots, and they also had 2 jumpseaters, a Captain and F/O. On the flight, the Captain was the flying pilot.

They had an issue with the number one pack during the flight. It failed twice, the first time "putting it in the A mode", and the second time in the B controller.

In Hong Kong, he did not perform the walk-around on the aircraft. He could not remember who performed it. He said typically it was the captain, but sometimes it was an IRO. He did not remember anything about the loading in HKG, and could not remember if there were any write-ups in the logbook. He remembered looking at the logbook and seeing something about one of the packs.

The HKG-DXB flight was "pretty close" to eight hours. He was sure "there was some movement" between the cockpit and the back of the aircraft, but could not remember specifics. He said he did not remember putting on a mask during the flight. Typically, they waited until a jumpseater would come up before they would take a bathroom break.

He said that most guys try to put the masks on during breaks, but some do not. He said the issue was not having to put on and wear the mask, but how clean the mask was, considering issues with flues. He said he normally would set the mask to 100% oxygen. He had never noticed anyone switching the mask over to normal.

They are required to preflight the O2 masks for flow and system quantity. They also test the emergency function and the intercom function of the mask. He said that he made sure he pushed the switch on the radio panel so that he could hear the oxygen over the speaker. He said he normally used the yoke switch to transmit via intercom or on the radio, and found it easier and part of his normal habit pattern.

They are trained on the O2 masks and system through CBT[19] training during initial, and some in recurrent training. He said "there are opportunities" to conduct hands-on training of the masks, but it was up to the individual. He remembered someone talking about the goggle vent on the

[19] Computer Based Training

mask, but he did not remember ever having to use it, and it was not something "people commonly used."

He said there were no operational issues with the oxygen system on the flight from HKG.

Regarding the pack one issue on the HKG-DXB flight, he recalled that it occurred at cruise altitude, not during climb, and toward the first part of the flight.

He did not recall ever having any issues with the oxygen system on the B747-400.

He had donned a mask during an emergency in the military, and it was a full-face mask. He had never had to don the mask and goggle combination before.

He said the preflight of the oxygen system included preflighting the goggles. He would handle them and make sure they were there, but would not necessarily put them on. The F/O would also be required to preflight the O2 masks for the observer seats.

He did not wear glasses, and did not know of any problems donning the masks or goggles with eye glasses.

He said you were not required to use 100% during a bathroom break, but he did so out of habit from the military.

He said out of 18,000 feet, he usually would take his headset off and turn the speaker on.

They receive ground training every recurrent training cycle on how to fight a fire. He said they were trained to fight a fire on the main deck, and they had received training on the "wand" via computer based training.

Interview concluded at 1334 EST.