

Docket No. SA-523

Exhibit No. 14-A

NATIONAL TRANSPORTATION SAFETY BOARD

Washington, D.C.

Human Performance Specialist's Factual Report

(15 Pages)

NATIONAL TRANSPORTATION SAFETY BOARD
Office of Aviation Safety
Washington, D.C. 20594

April 25, 2003

Human Performance

Human Performance Specialist's Factual Report

A. ACCIDENT

Operator: Air Midwest d.b.a. US Airways Express (Flight 5481)
Location: Charlotte/Douglas International Airport (CLT)
Date: January 8, 2003
Time: 0848 eastern standard time¹
Aircraft: Beech 1900D, N233YV
NTSB Number: DCA03MA022

B. GROUPS

The Human Performance Specialist joined two investigative groups in this investigation. During the on-scene phase, the specialist worked with the Operational Factors/Human Performance Group. The specialist later worked with the Aircraft Maintenance and Records Group.

Operational Factors/Human Performance	Aircraft Maintenance & Records
Kenneth L. Egge, Chairman, NTSB	Stephen Carbone, Chairman, NTSB
Paul Misencik, NTSB	Evan Byrne, NTSB
Evan Byrne, NTSB	William Bramble, NTSB
Hal J. Kennedy, FAA	Stephen Wright, FAA
Louis I. Johansen, Raytheon Aircraft	Stanley Patterson, Raytheon Aerospace, LLC
Henry J. Myers, Air Midwest	Thomas Peay, Raytheon Aircraft
Brian C. Richardson, ALPA	Mark Hackett, ALPA
	Joseph Machalek, Air Midwest
	Michael Madia, IAM

¹ All times are eastern standard time based on a 24-hour clock, unless otherwise noted.

SUMMARY

On January 8, 2003, about 0848 Eastern Standard Time, a Beech 1900D, N233YV, operated by Air Midwest Inc. as flight 5481 for the 14 CFR Part 121 scheduled airline service from the Charlotte/Douglas International Airport, Charlotte, North Carolina, to Greenville-Spartanburg International Airport (GSP), Greer, South Carolina, crashed shortly after takeoff after a distress call was made by the captain. Visual meteorological conditions prevailed and an instrument flight rules flight plan was filed. Nineteen passengers and two flight crewmembers received fatal injuries. One person on the ground received minor injuries. The airplane was destroyed by impact forces and fire.

D. DETAILS OF THE INVESTIGATION

The Operational Factors / Human Performance Group convened at Charlotte/Douglas International Airport, Charlotte, North Carolina, on January 8, 2003, to begin the field phase of the accident investigation. The group reviewed relevant documents and interviewed witnesses and company personnel. The group concluded the field phase of the accident investigation on January 15, 2003. Subsequent interviews to obtain additional background information on the flight crew were conducted by the human performance specialist. On January 30-31, 2003, the human performance specialist participated in the Aircraft Maintenance and Records Group interviews of maintenance personnel conducted in Huntington, WV.

E. FACTUAL INFORMATION**1 Personnel Information²****1.1 Flight Crew****1.1.1 The Captain**

The captain, age 25, held a first class medical certificate issued November 19, 2002, with no limitations. The captain reported 2,800 hours total pilot time with 350 accumulated in the past 6 months on the medical application. A search of records at the National Driver Register found no history of driver's license revocation or suspension.

From September 1995 to May 1999, the captain attended Louisiana Tech University and graduated Cum Laude with a Bachelor of Science degree in Professional Aviation. The captain was employed as a flight instructor and flight school supervisor at the university from February 1999 to March 2000. According to a resume submitted to Air Midwest for employment purposes, the captain was a flight training intern at

² For additional information about the flight crew see the Operational Factors Group Chairman's Factual Report.

American Airlines from June 1998 to August 1998. At the university, the captain was on the flight team from 1998-1999, and named the Outstanding Aviation Student in May 1999. A resume, dated January 27, 2000, showed flight experience in the following airplanes: BE-76, C-310, C-172, C-152. The captain was hired by Air Midwest in March 2000.

Air Midwest pilots who had flown with the captain had favorable comments. For example, a checkairman said the captain had no difficulties during upgrade training and demonstrated very good knowledge of the airplane's systems and very good judgment. Another checkairman who administered a checkride in August 2002, described the captain as one of the better pilots at the company and someone who made very good decisions about flying. First officers described the captain as a thorough and methodical pilot, who controlled the airplane well, and would involve first officers in the flight by asking for opinions and having them review paperwork. Several pilots remarked that the captain's detailed knowledge of the airplane was an informal standard discussed in ground school. Specifically, there was a saying that pilots would have no difficulties in training if they knew the material as well as the captain.

The captain was single and lived in an apartment with two roommates in the Charlotte area. According to friends and colleagues, the captain was described as enjoying cooking, movies, swimming, and outdoor exercise when not working. The captain was reported to be in good health, a nonsmoker, and someone who would occasionally have a glass of wine with dinner. The captain's personal situation was reported to be stable. Friends described the captain's financial situation as adequate and noted that the captain had purchased a new car after Christmas. When not flying, the captain would wake between 0730-1000 and would normally go to bed between 2300-0000.

Friends described the captain's activities in the days before the accident as routine and indicated there was nothing abnormal.³ The captain was reported to be in good health and in a good mood in the days before the accident and had not consumed alcohol or taken any medications that would have affected her performance. The captain was described by her boyfriend as healthy, happy, and not tired on the morning of the accident.

1.1.1.1 Activity Lookback / 72-Hour History

The captain was off-duty on January 2-3. On January 2 the captain returned to the Charlotte area after spending time with family in the Dallas area. On January 3, the captain engaged in routine activities with friends and went to bed around 2130-2200. On January 4, the captain was on reserve duty from 0500-1900 and notified of a trip assignment for the next day originating in Key West (EYW). On January 5, from about

³ The captain had complained to friends about her long duty day on Tuesday, January 7. Friends said although she was irritated it was "not a major thing." See Attachment 1 for additional information about the captain's activities.

0810-1144 the captain deadheaded from CLT to EYW. From about 1230⁴ to 2330 the captain flew 6 flights and accumulated about 5:58 flight time. The captain was dropped off at her hotel on January 6 about 0035.

On January 6, the captain awoke and took a 3-hour walk before breakfast. From about 1130 to about 1600 the captain deadheaded back to CLT from EYW. After returning to CLT, the captain ran errands with her boyfriend before returning to the apartment where the captain baked, went for a long walk/jog, cooked dinner, and went to sleep around 2230-2300.

On January 7, the captain awoke about 0900-0930 and ate breakfast at home.⁵ About 1000, the captain was notified by crew scheduling that she would be flying a multi-leg trip that day with the accident first officer. The trip was scheduled to depart at 1200 but did not actually depart until 1340, the captain accumulated about 6 hours flight time over 6 legs, returning to CLT about 2045. The captain's boyfriend picked her up at the airport, before returning to the apartment about 2130. They ate dinner and went to bed around 2230. Friends described the captain as tired, but not too worn out, after the day of flying.

On January 8, the captain awoke about 0625 to get ready for trip. She made breakfast and prepared a snack. Her boyfriend then drove the captain to the airport. An Air Midwest pilot saw the captain in the E4 gate area about 0745.

1.1.2 The First Officer

The first officer, age 27, held a first class medical certificate issued December 10, 2002, with no limitations. He reported 1,050 hours total pilot time with 350 accumulated in the past 6 months on the application. A search of records at the National Driver Register found no history of driver's license revocation or suspension.

The first officer graduated from the University of Oregon in 1997 with a major in Spanish and a minor in economics. After graduation the first officer worked in a family-owned engineering company as a project manager and quality control manager. The first officer was also a licensed California real estate broker. From August 1999 to February 2001, the first officer was enrolled at San Juan College in Farmington, NM, as part of the Mesa Airlines Pilot Development Program. The first officer graduated with an associate of science degree in aviation technology and was hired by Air Midwest in May, 2001. According to his application for employment dated May 7, 2001, the first officer soloed in 1993, and had flight experience in the following airplanes: BE-36, BE-58, BE1900, Aeronca Champ, and Citabria.

⁴ Times are actual departure and arrival times. Air Midwest requires pilots to arrive 45 minutes before scheduled departure time and credits pilots with 15 minutes duty after arrival time for post-flight activities.

⁵ The captain was on reserve duty that day, starting at 0500.

Letters of recommendation from flight instructors at San Juan College contained favorable comments about the first officer's scholarship, flight aptitude, and potential to contribute to the Mesa Air Group as a pilot. For example, a letter dated December 20, 2000, from the instructor who provided instrument and commercial pilot training stated that the first officer's "...attitude toward flight safety and the safety of others will serve him well throughout his aviation career." A letter dated February 10, 2001, from the instructor who provided multi-engine training, stated, "...He exhibited skills above those with commensurate experience."

Air Midwest pilots who had flown with the first officer had favorable comments. The first officer was described as a talented and very precise pilot who had a good attention to detail, was a good communicator, and had good rapport with the passengers. The first officer was also described as having good situation awareness, good knowledge of the airplane, and in command of what he was doing. Friends and colleagues of the accident captain said that she enjoyed flying with the first officer and thought he was a good support pilot.

The first officer was single and lived alone in an apartment located about 35-50 minutes from CLT. The first officer was a member of an outdoor sports and recreation club in the Charlotte area, and enjoyed outdoor activities like white-water kayaking and hiking when not working. He also liked to travel, cook, and go to movies. The first officer was described as an industrious, self-motivated individual. He was described as being in excellent health and as someone who worked out regularly. The first officer was a nonsmoker who occasionally consumed alcohol in a social setting, and did not take medications. He was described as a morning person who would usually get up around 0830-0900 if not working. His personal and financial situation in the months preceding the accident were described as stable. Friends who spoke with or saw the first officer in the days before the accident reported nothing unusual.

1.1.2.1 Activity Lookback / 72-Hour History

On January 2, the first officer flew a two-leg trip from about 1040 to 1310 originating and terminating in CLT. The first officer was off duty on January 3-4.

On January 5, the first officer called a friend about 1100 to discuss their plans to go away on a trip the following weekend. The friend described the first officer as normal and said that the first officer was helping his father by doing some work on the company's website. The first officer had originally planned to play Frisbee golf but the weather was not good enough so he told the friend he would listen to music and relax at home while working on the web site. Later that day, about 2035, the first officer departed CLT for a flight to Lynchburg, which arrived about 2130, to begin a 8 hour and 50 minute rest period.

On January 6, about 0620, the first officer flew back from Lynchburg and arrived CLT about 0715. A captain who spoke with the first officer after he arrived in CLT that morning described him as normal and really happy. The first officer's activities after returning to CLT are not known.

On January 7, the first officer spoke with a friend about 0900. The friend, also an Air Midwest pilot, said it was a routine conversation and they discussed the friend's move to Shreveport. The first officer told the friend he was on call for the next few days. The first officer was assigned a trip that day, with the accident captain, scheduled to depart at 1200. The first leg of the 6-leg trip actually departed CLT about 1340. The trip was flown in the accident airplane. The first officer who was a nonflying pilot of the accident airplane from HTS to CLT told the accident first officer (as they handed-off the airplane) that everything was normal and it was a good flying airplane. The first officer returned to CLT about 2045 after accumulating about 6 hours of flight time. On the ramp at CLT, the accident first officer spoke with the first officer of the crew receiving the airplane for a flight to Lynchburg. It was a routine conversation and the accident first officer did not indicate there were any problems with the airplane.

On January 8, the first officer was seen at the E4 gate area about 0800.

1.2 HTS Maintenance Personnel⁶

Scheduled maintenance was performed on the accident airplane at Air Midwest's Huntington, West Virginia, facility (HTS) the night of January 6, 2003. Raytheon Aerospace, LLC, (RALLC) provided mechanics, quality assurance inspectors, and managers to Air Midwest. RALLC used Structural Modification and Repair Technicians, Inc., (SMART) to supply mechanics; and employed their own quality assurance inspectors, parts personnel, and site manager.

1.2.1 Quality Assurance Inspector

The Quality Assurance Inspector, age 50, was employed by RALLC. He was hired in July, 2002, as a mechanic at the HTS maintenance base, and was subsequently promoted to foreman and secondary or back-up QA inspector. He held an Airframe & Powerplant (A&P) certificate issued January 26, 1985. On his application for employment, he reported 3-4 years of aviation maintenance experience with light general aviation airplanes. From about 1988 to 1999 he was not employed in the aviation maintenance field. In July, 1999, he was hired as a mechanic by Mesa Airlines working on BE1900 airplanes at Dubois Jefferson County Airport in Pennsylvania. While remaining at the Dubois base and working on BE1900 airplanes, he was employed by Artic Slope (12/99-9/01) and RALLC (9/01-10/01). After September 11, 2001, he left the aviation maintenance field until being hired by RALLC at the HTS base. The RALLC Site Manager for the HTS base described the inspector as very conscientious and meticulous. The Air Midwest Regional Site Manager stated that he had a lot of faith in the inspector.

⁶ For additional information about the maintenance personnel and the HTS maintenance base, see the Aircraft Maintenance and Records Group Factual Report.

The inspector told investigators he was not performing supervisory duties on the night of the "Detail 6" inspection, but was acting as a trainer for two mechanics. He stated that night was his first time in which he provided on-the-job training to two mechanics as an inspector. The inspector was also performing borescope inspections for each engine, which he estimated took about 30 minutes per engine to accomplish. He stated that he had multiple tasks and responsibilities that night, but was able to dedicate his attention to what was necessary.

According to RALLC time cards, the inspector started work about 2100 on January 6 and ended his shift at 1230 the next day. Before that shift, the inspector had worked from 1700 on January 4 to 1200 on January 5, and from 2100 on January 5 to 0630 on January 6. He did not recall his specific schedule for those days but described the workload as typical. He said that he normally goes to sleep when he gets off his shift and then gets up in the afternoon.

He described his general health as good and reported having a cold in the days before the accident which required him to take Tylenol Cold medicine. He did not know if he took the medication on the night of January 6. He reported no significant life events and stated nothing affected his performance that night.

1.2.2 Maintenance Technician

The Maintenance Technician, age 30, was employed by SMART. He was assigned to the HTS base on November 18, 2002. He earned an A&P certificate at the Pittsburgh Institute of Aeronautics from 1991 to 1993. From 1994 to 2000 he held a job not associated with aviation maintenance. From January 2000 to October 2000, he worked line maintenance with Piedmont Airlines in Philadelphia on DHC-8 airplanes. From October 2000 to January 2002 he worked heavy maintenance with US Airways in Pittsburgh on B737 and F100 airplanes. He then worked at Stambaugh Air Service in Harrisburg from October 8, 2002 to November 15, 2002. He had no previous experience working on BE1900 airplanes. The RALLC Site Manager described the technician as capable and said he had received positive reports about him from foremen and inspectors at the HTS base. The Air Midwest Regional Site Manager described the technician as a good mechanic with a lot of common sense.

The technician described the maintenance performed on January 6 as his first "Detail 6" inspection. He estimated it took about 7 hours to accomplish the tasks⁷ he was assigned that night and he completed them about 0500 on January 7. He said that when he was assigned the task his on-the-job training (OJT) log was not signed off for the task because he "...never had any on the job training on it." The technician said he had previous flight control rigging experience while at Piedmont and at US Airways and there were no major differences between those aircraft and the BE1900 in terms of rigging flight controls. He said he felt properly trained for the rigging task. When asked

⁷ See Aircraft Maintenance and Records Group Factual report for specific information on the tasks performed.

whether he felt he was properly overseen during the task, he stated "Yes, when I needed help, there was somebody around."

According to SMART time sheets⁸ for the HTS base, the technician had worked 14 hours during the shift in which the accident airplane was in the hangar. Before that shift, the technician had worked 17.5 hours on the night of January 4, and 8 hours on the night of January 5. The technician said that his normal schedule was to leave work about 0630, return home and be asleep by about 0800. He said he would normally get up about 1600-1700. He could not recall his activities on the day before the maintenance was performed. He reported that when the maintenance was performed he was in good health, not sick, and not taking any medications. He reported a stable personal situation and no significant life events. He said nothing affected his performance that night.

1.2.3 Foreman

The foreman on the night of January 6, 2003, age 36, was employed by SMART. He held an A&P certificate and started work at the HTS base in July 2002. He stated that he held the position of foreman at the HTS base. From 1984 to 1987 he was a mechanic working on B-52 and KC-135 airplanes in the USAF. From 1993 to 1999 he worked as a mechanic on a variety of general aviation and commuter airplanes. In December, 2001, while working for SMART, he was assigned to RALLC in Dubois, Pennsylvania, as a mechanic working on BE1900 airplanes. He stated that he had previous experience as a foreman while working in the USAF.

He said on a typical day, he arrives between 2100-2130, about 30 minutes before the airplane arrives. He would then review the work scheduled for the shift, organize the paperwork, and review the personnel and equipment requirements. He is responsible for assigning people to the required tasks, and stated that he does not actually do the maintenance himself. He said work assignments are based on what work needs to be done and what person is best at doing a certain job. The foreman tries to keep the same mechanics on the same job throughout the night. The foreman normally communicates with Maintenance Control about the status of the airplane around 0400.

On the night of January 6, 2003, he assigned the work tasks for the Detail 6 inspection. He was aware that the technician (see section 1.2.2) had not done the elevator rig check task on the BE1900 airplane before, but had assigned him to that task because of the technician's experience working flight controls on other aircraft. The foreman told investigators "...that particular night, with the particular people there, the only one that was signed off on anything on the tail inspection was [the inspector] and me."

The foreman described the night of January 6 as "just like any other detail night, nothing out of the ordinary." He stated he was out on the airplane that night, "out of

⁸Time sheets only show total time worked. Actual start-stop times are not shown.

necessity.” He stated that the only thing that stood out in his mind about that night was the work done on the fuel control on the left engine.

The foreman stated that he does train mechanics. He said that if a mechanic has not done the job before, and has someone available who has done the job before, he will have the experienced mechanic do the job and will train everyone else as time applies. He said they try not to have more than one trainee at a time, but that sometimes it does happen where there is more than one mechanic being trained.

According to SMART time sheets for the HTS base, the foreman had worked 15 hours during the shift in which the accident airplane was in the hangar. Before that shift, the technician was off duty on the night of January 4, and had worked 8 hours on the night of January 5.

1.2.4 RALLC Site Manager

The RALLC Site Manager for the HTS base, age 50, was hired in July 2002 as a RALLC employee. He holds an A&P certificate and had previously been employed by SMART as a mechanic assigned to the RALLC facility in Panama City, Florida (PFN) since June 2001. At the PFN base, he worked on BE1900 airplanes and became the lead mechanic with the responsibility for two crews and other auxiliary duties. The RALLC site manager had previous aviation manufacturing, and maintenance experience on a variety of large (B727, A300, L-1011, DC-8, DC-9, C-5B, C-130, P-3) and general aviation airplanes (including Learjet 25 and 35) . He received no formal training for his position as Site Manager but observed and communicated with the other RALLC Site Managers.

The RALLC Site Manager worked from 0800 to 1700 Monday through Friday.⁹ During his normal shift, he interfaced with other personnel at the HTS base who work the day shift, including the Air Midwest Regional Site Manager, and the RALLC parts clerk and parts supervisor. He said in the course of his day he typically reviewed paperwork from the previous night and made sure the airplane was at the gate on time. Specifically, he would examine the status and condition of the hangar and its equipment general condition and safety; review the previous night's work order to identify what was done and to check that the work has been properly documented; review attendance sheets and time cards; and coordinate with the parts manager to ensure they have the parts available for their needs. The RALLC Site Manager was not directly involved in financial management of the base or establishing its budget but he did have \$1,000 per month discretionary funds allocated for immediate needs; and he was also responsible for controlling personnel costs. The RALLC Site Manager was a participant in a daily maintenance conference call. The conference call addressed upcoming maintenance needs, a discussion of delays, and equipment needs. Site Managers from the four other RALLC sites and Air Midwest maintenance personnel in Wichita participated on the call.

⁹ He told investigators that he would occasionally stop by the hangar at night, and it was convenient for him to do it because the hangar was close to his home.

1.2.5 Air Midwest Regional Site Manager

The Air Midwest Regional Site Manager¹⁰, Age 44, has held this position at HTS for Air Midwest since August, 2002. He holds an A&P certificate and has been employed by Air Midwest for 22 years. Before the HTS assignment, he spent 8 years in Wichita as a Quality Assurance Inspector for Air Midwest. He bid on the HTS position because it was closer to home. He has aviation maintenance experience on a variety of turboprop commuter airplanes.

The Regional Site Manager reports to the Chief Inspector for Air Midwest in Wichita. The Regional Site Manager said he is responsible for monitoring the work of the RALLC personnel and is also responsible for conducting indoctrination training and any other specialized training that may be required. He said that he typically does not have any direct contact with mechanics who work on the Air Midwest airplanes unless he is providing training or correcting paperwork issues that he has identified. The Regional Site Manager has no back-up for his position at HTS. In the event he is not there for an extended period, Air Midwest would either send a Regional Site Manager from another base to cover his duties or the paperwork normally sent to Wichita every Monday, Wednesday, and Friday would be reviewed there instead of at HTS.

The Regional Site Manager described his daily activities. He normally worked from 0830 to 1700 Monday through Friday but would occasionally visit the hangar at night.¹¹ On his regular shift, he would typically review the previous night's paperwork to determine if everything has been signed off properly. If he noted any discrepancies he would speak with the RALLC Site Manager to get it corrected, or he would write up a non-compliance form. He also participated in the maintenance conference call at 0900, and another conference call at 0930 (which included flight operations personnel). Other duties and responsibilities included calibration of tools when required, and he was responsible for conducting fuel service audits for 19 cities in the CLT system.¹² He told investigators that he really did not have that much to do. He also stated that he had "...no authority over anybody, period.", but acknowledged that the mechanics at the HTS base report to indirectly to him, saying: "It is not, you know, if I have a problem with them, with their paperwork or the way they are doing things, they do have to answer to me. But, it is, it is kind of a round about situation. I go through Gary with any problems I have, and everybody else answers to Gary."

¹⁰ The original title of this position was Quality Assurance Manager. Air Midwest made a system-wide change in the title of this position.

¹¹ In February 2003, he was reassigned to work the overnight shift. See Aircraft Maintenance and Records Group Factual Report for additional information.

¹² As of January 2003, he had not conducted audits beyond the HTS base. The first audit is scheduled for August 2003.

2. HTS Maintenance Base¹³

2.1 Work Shifts¹⁴

Shifts for maintenance personnel at HTS typically started about 2200, the airplane usually arrived in the hangar by 2230, and the shift normally ended about 0630. On weekends, the shifts started about 1800, the airplane usually arrived about 1830, and the shift normally ended about 0200 to 0400 depending on workload. Airplanes were scheduled to be in the hangar for about 8 hours on weeknights and about 18 hours on weekends (depending on flight schedules). Maintenance technicians, foremen, and inspectors worked the overnight shift with between 5 and 7 personnel normally working each night.¹⁵ Day shift personnel included the RALLC Site Manager, Parts Manager, Parts Clerk, and the Air Midwest Regional Site Manager.

The RALLC Site Manager described workload at the base as fairly stable. He said the base was scheduled for one airplane a night and that normally a heavy check would be scheduled only one or two nights a week. A three-day forecast was put out by Air Midwest Maintenance Control and it was used to manage the workload. All personnel stated that they would remain on-duty until work was completed on the airplane, and nobody pressured them to get airplanes out.

2.2 Hiring & Personnel Turnover

The RALLC Site Manager was in charge of personnel at the base and was allocated a number of positions for the base. To fill an opening at the base, he stated he would review resumes on file which were previously sent to RALLC, or he would call SMART. For the RALLC resumes, he would look for mechanics with skills consistent with what the HTS base needed at the time. He stated that if the RALLC resume looked good, he would probably hire the individual through SMART first to allow him to determine if the mechanic was going to work out before going through the hiring process at RALLC.¹⁶ The RALLC Site Manager had not hired anyone in that manner. He also had not hired any RALLC employees.

Of the 7 maintenance personnel on-duty when the accident airplane received the "Detail 6" check, 2 had been at the HTS base since it opened in July 2002 (Quality Assurance Inspector, Foreman), and the remaining 5 had all been hired within the previous 7 weeks.

¹³ For additional information about the HTS maintenance base, see the Aircraft Maintenance and Records Group Factual Report.

¹⁴ Attachment 3 contains time sheets for selected HTS personnel.

¹⁵ This number includes the foreman and the QA inspector. Two QA inspectors were employed at the HTS base at the time the accident airplane was in for the Detail 6: G. States (stamp DI701) worked on 01/06/03 (also worked from 2100-2300 on January 7). J. Sasso (stamp QC31AM) was off duty on January 5-6 and started work at 2100 on January 7.

¹⁶ He relies on the foreman and inspectors to provide input on whether the mechanic is working out or not. He meets with employees for the first time when they have arrived for indoctrination training.

Employee	Position	HTS Hire Date
R. Anderson	Mechanic	12/23/02
G. Stanley	Mechanic	12/20/02
E. Coleman	Mechanic	12/06/02
S. Miracle	Mechanic	12/06/02
B. Zias	Mechanic	11/18/02
R. Tucker	Foreman	July 2002
G. States	QA Inspector	July 2002

Management personnel at the HTS base described various reasons for turnover, including leaving for better contracts, trying to work closer to home, or leaving to work in another region of the country.¹⁷ Some personnel were let go to allow RALLC to hire mechanics with a particular area of experience.¹⁸ One mechanic who was on duty on January 6, stated that when he first arrived the foreman would have meetings with the mechanics when the shift started because “there is a lot of people that wasn’t sure what to do.”

The RALLC Site Manager said that about 65 percent of the personnel at the HTS base did not turnover. He estimated that the average tenure for the SMART employees was about 3 months. The RALLC Site Manager said the he gave SMART employees every chance to succeed and he did not believe there was a difference in the attitude, tenacity, skills, or competency between RALLC and SMART employees. He said the RALLC employee may have more pride in the place of business as compared to a contractor, but when it came down to doing the work there would be no differences. However, he said that he believed there would be a different level of commitment in that RALLC employees would “...settle down here and live here and raise a family here, and be here. They have made that commitment. I guess commitment would be the most important thing.”

The Air Midwest Regional Site Manager stated that he saw no differences between RALLC and SMART employees, except that the SMART personnel come in for a couple months and leave. He said if turnover were reduced it would keep experience out on the floor. He said “What is the use of somebody coming in here for a month and you are training for a month and he has gone. You have to start all over again.” He told investigators that he has had more people quit than he has had on the floor. He stated that he likely had “15 files of people who quit, in six months that is a high turnover rate.”

2.3 Training

¹⁷ One mechanic who started work on 12/06/02 left the HTS base on 1/30/03 to work for another contractor and assignment in Nashville. The mechanic told investigators that he saw the HTS assignment as temporary and he was filling-in there until he was able to get an assignment in Florida.

¹⁸ For example, a mechanic was let go to allow a mechanic with avionics and QA experience to be hired.

Personnel at the HTS base reported that training consisted of an indoctrination orientation and on-the-job training. The indoctrination consisted of a review of Air Midwest procedures, policies, and documents. The Air Midwest Regional Site Manager described it as “paperwork training.” A 50-question multiple choice examination was given at the conclusion of the training with a passing grade of 70%.¹⁹ The duration of this training was reported to be 4 hours and it was paid training. Time cards showed that a mechanic hired on 12/23/02 had only 2 hours charged on the day the mechanic said he had gone through the orientation training.

HTS personnel were not given a classroom BE1900 familiarization training course. All airplane-specific training was provided through on-the-job training. On The Job Training/Record of Training forms were reviewed for HTS maintenance personnel. The following items were noted (see Attachment 2):

- Inspection Procedures Detail #6 Aft Fuselage/Empenage for E. Coleman stamped off by QC31AM on 01/06/03.
- Inspection Procedures Detail #6 Aft Fuselage/Empenage for B. Zias signed off by DI701 (no stamp used) on 1/7/03.
- ATA 27-00, Aileron, Rudder, or Elevator cable Tension Adjustment for B. Zias signed off by DI701 (no stamp used) on 1/7/03.

2.4 Audits & Oversight²⁰

HTS management personnel (RALLC Site Manager & Air Midwest Regional Site Manager) described audits and inspections by the FAA and Air Midwest at the HTS base.

The Air Midwest PMI visited the HTS base in the Fall of 2002. The PMI reviewed training records, other documentation, and also observed overnight maintenance operations. The RALLC Site Manager stated that the PMI told him that the mechanics seemed very competent. According to the RALLC Site Manager, about that time they “...had people training us from other sites on a regular basis and so we had two guys that were really knowledgeable, plus the staff that we normally had.” The PMI also noted that the hangar lighting needed to be improved and they needed to have more work benches in the hangar. According to the HTS management personnel, the PMI’s findings were only verbally briefed. Charleston, West Virginia (CRW), FSDO flight standards inspectors had visited once for an informal introduction but it was not an inspection of the facility. According to the Air Midwest Regional Site Manager, airworthiness inspectors from CRW visited once while he and the RALLC Site Manager were at lunch but the inspectors never returned.

¹⁹ Note, there is also a 100-question test for recurrent training.

²⁰ See Attachment 5 for correspondence relevant to the Air Midwest audits, and excerpts from the Air Midwest Audit manual.

Air Midwest conducted an audit of the HTS base November 5, 2002. The Air Midwest auditor was at the base for one day and did not observe overnight maintenance operations. There was an in-briefing with the Regional Site Manager and the RALLC Site Manager. The auditor also provided an out briefing and a subsequent letter outlining findings. Items noted for corrective action included placards for fire extinguishers, hangar lighting, drip pans for engines, additional clearance required in front of eye wash station, and insufficient staffing. The RALLC Site Manager said that all deficiencies identified by the Air Midwest audit had been corrected.

Air Midwest audited the HTS base after the accident on January 14, 2003. According to HTS management personnel, the auditor observed overnight maintenance operations, working conditions, and work practices. The auditor also reviewed documents and training records. According to the Air Midwest Regional Site Manager, the auditor noted an improperly logged revision, an anomaly with a training file, and a need to improve the fire extinguisher placards. The training file finding was a mechanic who had written in the OJT log that he had been trained on a task but nobody had signed off on the item. The Regional Site Manager believed the file belonged to the mechanic who performed the work on the elevator system on January 6, 2003, but he did not recall the task.

3. Medical and Pathological Information

Tissue specimens from the captain and first officer tested negative for ethanol and a wide range of drugs, including major drugs of abuse.²¹ Post-accident drug testing on the ramp supervisor and two loaders working the flight was negative.

Post-accident drug testing was performed on the ramp employees who worked the accident flight and their supervisor, the mechanic who performed work on the elevator system, and the quality assurance inspector. Urine for these individuals tested negative for drugs of abuse.²²

²¹ The five drugs of abuse tested in post-accident analysis are marijuana, cocaine, opiates, phencyclidine, and amphetamines.

²² Urine samples were obtained on 1/8/03 at 1530 and 1745 for the ramp employees, 1230 for the supervisor, and 1542 for the quality assurance inspector. Samples were obtained on 1/9/03 at 1000 for the mechanic.

F. LIST OF ATTACHMENTS

Documents	Attachment #
Interview Summaries	1
Trip Schedules for Flight Crew	2
HTS Time Sheets	3
On the Job Training/Record of Training Logs	4
Air Midwest Audit Correspondence & excerpts	5
Final Forensic Toxicology Fatal Accident Report	6

Submitted by:

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Date