NATIONAL TRANSPORTATION SAFETY BOARD
Office of Aviation Safety
Washington, DC 20594

Group Chairman's Factual Report
September 24, 2002

AIR TRAFFIC CONTROL GROUP

DCA02MA054

A. ACCIDENT

Location: Tallahassee Regional Airport, Tallahassee, Florida

Date: July 26, 2002

Time: 0537 eastern daylight time (EDT)/ 0937 coordinated universal time (UTC)[1]

Aircraft: N497FE, Boeing 727, operating as FedEx flight 1478 (FDX1478)

B. AIR TRAFFIC CONTROL GROUP

Chairman: Mr. Scott J. Dunham
National Transportation Safety Board
Washington, D.C. 20594

Mr. Steven Ring
National Air Traffic Controllers Association
Jacksonville Air Route Traffic Control Center

C. SUMMARY

On July 26, 2002, at approximately 0537 EDT, a Boeing B-727-232, N497FE, operating as FedEx flight 1478, crashed into trees on short final approach to runway 9 at the Tallahassee Regional Airport (TLH), Tallahassee, Florida. The flight was operating under provisions of Title 14 Code of Federal Regulations Part 121, as a scheduled cargo flight from Memphis, Tennessee (MEM) to TLH. Night visual meteorological conditions prevailed at the time of the accident. The three flight crewmembers were injured, two seriously, and the aircraft was destroyed by impact and resulting fire.

[1]All times are expressed in Coordinated Universal Time (UTC) unless otherwise noted.

D. DETAILS OF THE INVESTIGATION

The ATC group convened at Jacksonville Air Route Traffic Control Center (ZJX), Hilliard, Florida, on July 27, 2002. The ATC group received a briefing on the center's actions affecting FDX1478, reviewed the training folder of the controller who was handling the flight during the period just before the accident, collected data on relevant ZJX airspace and operations, reviewed recorded automation data showing ZJX radar positions and other flight data history for FDX1478, and reviewed additional radar data supplied by TLH terminal radar approach control (TRACON). The ATC group also interviewed the ZJX controller that handled the flight's arrival into TLH. On July 28, 2002, the ATC group traveled to TLH to observe the accident scene, airport navigational aids, radar site location, and precision approach path indicator equipment. On July 29, 2002, the ATC group interviewed Michael Peymann, TLH Air Traffic Control Tower (ATCT) controller, who heard the accident and alerted the airport rescue and firefighting crews.

The field phase of the ATC investigation ended on July 30, 2002.

1. History of Flight

TLH ATCT operates part time, and was closed from 0300 to 1000. When TLH ATCT is closed, the airspace normally delegated to TLH TRACON and ATCT reverts to ZJX. During the approach and landing at TLH, FDX1478 was under control of ZJX sector R28.

The crew of FDX1478 contacted the ZJX R28 controller at 0915:48, stating, "Jacksonville Center, uh good morning Fedex fourteen seventy eight two nine oh discretion to two four oh." The R28 controller responded, "Fedex fourteen seventy eight Jax center roger descend at pilot's discretion maintain niner thousand Tallahassee altimeter three zero one zero." The crew acknowledged. At 0918:30, the crew of FDX1478 transmitted, "Atlanta Fedex uh fourteen seventy eight leaving two nine oh for nine thousand." The R28 controller acknowledged. At 0922:42, the R28 controller transmitted, "Fedex fourteen seventy eight descend at pilot's discretion maintain three thousand," and the crew responded, "Discretion to three thousand Fedex fourteen seventy eight." At 0923:29, the R28 controller instructed the crew to change to frequency 135.32, and the crew acknowledged. At 0923:45, the crew of FDX1478 reported on the new frequency. At 0923:49, the R28 controller acknowledged the crew's check-in and asked if the crew had the TLH weather. The crew of FDX1478 responded, "Yes, sir, we do Fedex fourteen seventy eight."[2] At 0923:58, the R28 controller told the crew to expect a visual approach and to report the airport in sight. The crew read back the instructions. At 0929:55, the crew of FDX1478 stated, "Jacksonville Fedex uh fourteen seventy eight we have the airport." The R28 controller replied, "Fedex fourteen seventy eight cleared

[2] The TLH 0853 weather observation was: 12005KT 9SM FEW001 SCT180 SCT250 22/22 A3010.

visual approach into Tallahassee. Are you showing the uh NOTAM[3] Tallahassee runway one eight three six is closed?" The crew responded, "Uh no sir but we're going to use runway nine." At 0930:12, the R28 controller transmitted, "All right you're cleared for the visual approach and report your down time this frequency if unable to Gainesville radio change to advisory approved." At 0930:12, the crew of FDX1478 responded, "Fedex fourteen seventy eight good morning."

There was no further air traffic control contact with the aircraft. The last recorded radar return for FDX1478 was at 9:37:22.97.

2. Radar Data

The closest ZJX radar sites to the TLH area are Air Route Surveillance Radar-4 (ARSR-4) systems located at Panama City, Florida, and Cross City, Florida. Both sites are approximately 80 miles away from TLH, and do not provide coverage to the surface in the TLH area.

TLH TRACON utilized an ASR-8 radar system located at 30:23:15.68N / 084:20:41.15W, which is along the right side of runway 9 approximately 0.6 nm from the threshold. This radar does provide coverage to the surface in the TLH airport area.

Radar data showing the trajectory of FDX1478 was obtained from both ZJX and TLH TRACON. According to recorded radar data, the ZJX track for the aircraft went into coast status (indicating loss of radar contact) at 0936:41. The last observed target for the flight was recorded at 9:37:22.97 by the TLH TRACON radar system, which is not connected to ZJX and was therefore unavailable to the R28 controller. The TLH radar data shows the aircraft as low as 200 feet mean sea level (MSL) at 0.81 nm from the radar antenna. All radar data collected from TLH and ZJX has been supplied to the Aircraft Performance group for analysis.

3. Airport Lighting Information

TLH airport management provided copies of the airport lighting control logs for July 25 and July 26, 2002. The airport lighting system operates in two different modes depending on whether the tower is open or not. When the tower is open, the lighting system is controlled from the tower cab. When the tower closes, the controllers put the system in pilot-controlled lighting (PCL) mode, allowing the lights to be activated via radio clicks. All of the various airport lighting systems are controlled together, including runway edge lights, taxiway lights, and the precision approach path indicator (PAPI). At the time of

[3] Notice To Airmen - A notice containing information (not known sufficiently in advance to publicize by other means) concerning the establishment, condition, or change in any component (facility, service, or procedure of, or hazard in the National Airspace System) the timely knowledge of which is essential to personnel concerned with flight operations.

the accident, the lights were in PCL mode. The log indicates that the runway 9 lighting systems were activated between 0437:42 and 0437:47 local time, and remained on for 15 minutes. There were no other lighting activations between midnight and 0600 local time when the tower was scheduled to reopen. The ATC group noted that activation time was inconsistent with the time of the accident. Investigation indicated that the clock for the computer used to control the lighting system had not been reset for daylight savings time, accounting for a 60 minute discrepancy. Comparison of the computer time with a global positioning system time source indicated that the minutes component of the time was fast by three minutes and sixteen seconds. Applying the resulting 56 minute and 44 second correction to the logged times indicates that the lights were on for 15 minutes beginning at approximately 0534:26 local time. At that time, FDX1478 was about 9 miles west of the airport.

4. Precision Approach Path Indicator

An initial flight check of the runway 9 PAPI was conducted on July 29, 2002. According to a verbal report from the flight check pilot, flying the PAPI glidepath at both the "on-glidepath" and "below glidepath" limits resulted in adequate clearance from both terrain and trees on the runway 9 final approach course. An additional flight check was conducted on August 6, 2002. Radar data from both flight checks has been supplied to the Aircraft Performance group for comparison with the trajectory of FDX1478. The written flight check report is being supplied to the Airport Group by the FAA.

5. Personnel Interviews

Horace F. Davis **Sector 28 Radar Controller**

Mr. Davis entered on duty with the FAA on December 19, 1977 at Miami Air Route Traffic Control Center (ARTCC). He transferred to ZJX on January 9, 1983, and is fully certified in the West area of the facility, which includes sector 28. His medical certificate was issued with special consideration because of a need for prescription medication. The expiration date on the medical certificate was November 30, 2002.

Mr. Davis served in the United States Air Force from 1970 to 1977. He was assigned to Laredo Air Force Base for 3 years, where he performed both tower and radar control duties. He next served 2 1/2 years at Moody Air Force Base as a radar approach controller. Mr. Davis finished his tour of duty with 1 1/2 years at Patrick Air Force Base as a mobile ground controlled approach operator.

On the morning of the accident, Mr. Davis was working the Albany, Ashburn, Tallahassee, Waycross and Baxly sectors combined at the Tallahassee sector (sector 28.) This is not an unusual configuration for midnight shift operations. He was responsible for arrivals into TLH because TLH TRACON was closed until 0600 local time. There

were 3 controllers assigned to the shift. At the time of the accident, one was on a break and the other was working other sectors in the West area. Neither of the other two controllers was involved in handling FDX1478.

When the crew of FDX1478 reported on frequency, Mr. Davis cleared the flight to descend at pilot's discretion to maintain 9,000 feet. He then checked the 0853 TLH Automated Weather Observing System[4] (AWOS) observation to determine if the conditions were acceptable for a visual approach. He asked the pilot if he had the TLH weather, and the pilot stated that he did. Mr. Davis stated that the weather was "fine," so he told the aircraft to report the airport in sight for a visual approach. Mr. Davis stated that if the weather is marginal he will usually ask the pilot what approach is desired. After the pilot reported the airport in sight, Mr. Davis cleared the pilot for the visual approach, advised him of the current NOTAM stating that Runway 18/36 was closed, and told him to report his landing time on the sector 28 frequency or through Gainesville flight service.

Examination of recorded ARTCC data showed that FDX1478 generated a minimum safe altitude warning[5] during the visual approach. Mr. Davis stated that this happens all the time. Mr. Davis said that ARTCC radar coverage in the TLH area is poor, sometimes becoming nonexistent below 3000 feet. He does not recall the last altitude he saw in FDX1478's data block[6] before the track went into coast status.[7] Mr. Davis also did not recall any other traffic landing or departing from TLH in the previous hour.

After losing radar contact with FDX1478, the data block went into coast and Mr. Davis used the track function[8] to move the data block back over the airport location. When asked if the approach flown by FDX1478 appeared normal, Mr. Davis said that most aircraft use runway 27 because there is only a GPS approach to runway 9, and he didn't recall any other runway 9 approaches to compare with.

Mr. Davis found out about the crash when the area manager called and asked Mr. Davis if he handled TLH arrivals between 2300 and 0700 local. Mr. Davis replied that he did, and the manager told him that there had been an accident.

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[4] AWOS is an automated weather observation system that supplies weather data to air traffic facilities and also broadcasts observations for use by pilots in the airport area.

[5] The minimum safe altitude warning system alerts controllers when an aircraft descends below a predetermined altitude based on normal clearance from terrain or obstructions by flashing "MSAW" characters in the aircraft's radar data block.

[6] ATC radar systems provide identity, speed, and altitude information to controllers via a "data block" that is associated with each controlled aircraft.

[7] Coast status indicates that an aircraft is no longer visible to the radar system. The data block indicates "CST" and is no longer associated with a specific aircraft's target.

[8] The track function allows a controller to reposition a data block to either place it at a specific geographical position or associate it with a particular radar target. Controllers often use data blocks in coast status as reminders about aircraft that have descended below radar coverage, and the track function permits these data blocks to be placed in useful location, e.g., over the airport for an arriving flight.

The area that Mr. Davis works in has a large number of satellite airports, which provides plenty of practice at instrument approach procedures. Mr. Davis said that he is comfortable with the procedures for providing approach control services to TLH on the midnight shift.

Michael Peymann **TLH ATCT Controller**

Mr. Peymann entered on duty with the FAA on July 29, 1987. After completing FAA Academy training, he was assigned to the New York TRACON on November 18, 1987. On January 29, 1989, Mr. Peymann transferred to the Morgantown, WV, ATCT. On August 20, 1995, Mr. Peymann transferred to TLH ATCT, becoming fully certified in May of 1996. Mr. Peymann is not a pilot and had no air traffic experience outside the FAA. He has a control tower operator certificate issued September 5, 1989.

On the day of the accident Mr. Peymann was assigned a 0545 to 1345 local shift. He was the scheduled opener for the day, which means that he sets up the tower equipment and other items for the day. Mr. Peymann arrived at the facility at approximately 0530 local time. He was the first person to enter the building. He signed the personnel log and was making coffee in the break room when he heard an explosion outside.

Mr. Peymann looked through the glass door on the west side of the break room and saw a large fireball west of the airport. He immediately rode the elevator to the tower cab, confirmed that there appeared to have been an aircraft accident, and activated the crash phone. There was no immediate answer, so he hung up the phone and used the airport radio in the cab to attempt to contact anyone from the airport operations or fire crews. The fire crews responded immediately to the radio call, and Mr. Peymann told them that, "We have something down." The fire crew responded, “we’re on it.” Mr. Peymann stated that the airport rescue and firefighting (ARFF) crews were leaving the fire station within a minute or two after he completed the radio notification. The fire crews responded directly to the scene, and made no comments about any difficulty in reaching the aircraft. Mr. Peymann has never had any difficulties with the airport ARFF crews.

Mr. Peymann called ZJX to see if they had any inbounds to TLH, and was told by the Tallahassee Low (sector 28) controller that FDX1478 had been on approach. He pulled up a strip on FDX1478 to get the flight information. Next, he called the facility chief and the training specialist to inform them of the accident. The other controller on duty opened the TRACON, but the airport management told Mr. Peymann that the airport was closed so the tower cab remained effectively out of service. Mr. Peymann also notified the Atlantic Operations Control Center of the accident, and became involved in a conference call with several other parties involved. The supervisor arrived shortly before 0600 local time and Mr. Peymann handed over the phone to him. Mr. Peymann said he used the emergency checklist on the IDS-4[9] to determine what actions he needed to

[9] IDS-4 is a data management system that contains various types of graphical and text-based information useful to controllers.

follow and to obtain contact numbers for the manager and others. His actions were documented on FAA form 8020-3, Facility Accident/Incident Notification Record.

Mr. Peymann stated that he saw no fog or other significant obstructions to vision around the airport, and that he could see the crash site, the ARFF station, and the terminal from the tower. Mr. Peymann did not see the aircraft before the crash and neither he or anyone else entered the tower cab before the explosion. He has not had any particular problems with runway 9 arrivals in the past, and is unaware of any particular pilot difficulties on the runway 9 approach.

Scott J. Dunham
ATC Group Chairman

Attachments:

Jacksonville ARTCC

1. ZJX sector R28 transcript
2. DART and NTAP data for FDX1478
3. Copy of FDX1478 flight strip.
4. Minimum instrument altitude chart excerpt for ZJX sector 28 area.
5. ZJX Daily Record of Facility Operations, July 26, 2002
6. TLH Airport Diagram
7. Horace Davis medical qualification
8. Horace Davis controller statement
9. Sector 28 sign on / sign off log
10. West area personnel log
11. TLH-related NOTAMS
12. Airport/Facility directory page for TLH

Tallahassee Tower/TRACON

1. CDR extraction: TA/TU/TG messages July 26, 2002, 0930-1002 UTC
2. Daily Record of Facility Operations, July 26, 2002

Tallahassee Airport Operations

1. Airport lighting log file, July 26, 2002