National Transportation Safety Board
Washington, DC 20594

Brief of Incident

Adopted 02/19/2009

OPS08IA015A

File No. 24986 | 09/19/2008 | Allentown, PA | Aircraft Reg No. N506MJ | Time (Local): 19:45 EDT

Make/Model:	Bombardier Inc / CL-600-2C1
Engine Make/Model:	Ge / CF34 SERIES
Aircraft Damage:	None
Number of Engines:	2
Operating Certificate(s):	Commuter Air Carrier
Name of Carrier:	MESA AIRLINES INC
Type of Flight Operation:	Scheduled; Domestic; Passenger Only
Reg. Flight Conducted Under:	Part 135: Air Taxi & Commuter

	Fatal	Serious	Minor/None
Crew	0	0	4
Pass	0	0	56

Last Depart. Point:	Same as Accident/Incident Location
Destination:	Chicago, IL
Airport Proximity:	On Airport/Airstrip
Airport Name:	Allentown / Lehigh Valley Intl
Runway Identification:	06
Runway Length/Width (Ft):	7600 / 150
Runway Surface:	Asphalt
Runway Surface Condition:	Dry

Condition of Light:	Night
Weather Info Src:	Weather Observation Facility
Basic Weather:	Visual Conditions
Lowest Ceiling:	
Visibility:	10.00 SM
Wind Dir/Speed:	100 / 007 Kts
Temperature (°C):	16
Precip/Obscuration:	

Pilot-in-Command Age:

Certificate(s)/Rating(s)
Multi-engine Land; Single-engine Land

Instrument Ratings
Airplane

Flight Time (Hours)

Total All Aircraft:	Unk/Nr
Last 90 Days:	Unk/Nr
Total Make/Model:	Unk/Nr
Total Instrument Time:	UnK/Nr

National Transportation Safety Board
Washington, DC 20594

Brief of Incident

Adopted 02/19/2009

OPS08IA015B

File No. 24986 | 09/19/2008 | Allentown, PA | Aircraft Reg No. N736GV | Time (Local): 19:45 EDT

Make/Model:	Cessna / R172K
Engine Make/Model:	Cont Motor / IO-360 SER
Aircraft Damage:	None
Number of Engines:	1
Operating Certificate(s):	None
Type of Flight Operation:	Personal
Reg. Flight Conducted Under:	Part 91: General Aviation

	Fatal	Serious	Minor/None
Crew	0	0	1
Pass	0	0	2

Last Depart. Point:	Caldwell, NJ
Destination:	Same as Accident/Incident Location
Airport Proximity:	On Airport/Airstrip
Airport Name:	Allentown / Lehigh Valley Intl
Runway Identification:	06
Runway Length/Width (Ft):	7600 / 150
Runway Surface:	Asphalt
Runway Surface Condition:	Dry

Condition of Light:	Night
Weather Info Src:	Weather Observation Facility
Basic Weather:	Visual Conditions
Lowest Ceiling:	
Visibility:	10.00 SM
Wind Dir/Speed:	100 / 007 Kts
Temperature (°C):	16
Precip/Obscuration:	

Pilot-in-Command Age:

Certificate(s)/Rating(s)
Private; Single-engine Land

Instrument Ratings
Airplane

Flight Time (Hours)

Total All Aircraft:	1170
Last 90 Days:	Unk/Nr
Total Make/Model:	1100
Total Instrument Time:	UnK/Nr

OPS08IA015A

On September 19, 2008, at 1938 eastern daylight time, an operational error occurred that resulted in a near-collision on runway 6 at the Lehigh Valley International Airport (ABE), Allentown, Pennsylvania. Mesa Air Shuttle flight 7138, a Canadair CRJ-700 carrying 56 passengers and four crew from ABE to Chicago as a scheduled 14 Code of Federal Regulations (CFR) part 121 flight, aborted takeoff because N736GV, a Cessna 172 carrying a pilot and two passengers under 14 CFR part 91, had just landed and was still taxiing on the runway near the intersection with taxiway B. The crew of ASH7138 estimated the distance between the two aircraft as 10 feet when they passed. There was no damage to either aircraft and no reported injuries. Following the incident, both aircraft taxied to parking. The crew of ASH7138 elected to cancel the flight and have the aircraft inspected. N736GV taxied to general aviation parking and concluded the flight.

N736GV was operating under visual flight rules between Caldwell, New Jersey, and ABE with the pilot and two passengers aboard. N736GV first contacted ABE tower at 1929:28, when the aircraft was about 8 miles east of the airport. The controller instructed the pilot to continue for the downwind and report midfield. At 1933:30, the pilot reported midfield for runway 6 and was cleared to land. According to recorded radar data, N736GV crossed the threshold of runway six at approximately 1936:15.

At 1934:50, ASH7138 contacted the tower to report ready for takeoff and holding short of runway 6. The controller instructed the pilot to hold short of runway 6 for landing traffic According to recorded radar data, N736GV was last seen approximately 0.6nm from the runway threshold at 1935:44. Based on an estimated ground speed of 70 knots, the aircraft crossed the runway threshold approximately 1936:15. At 1936:27, ASH7138 was instructed to taxi into and hold on the runway.

At 1936:36, the local controller asked the pilot of N736GV where the aircraft would be parking, and the pilot responded that he would be going to hangar 7. The local controller instructed the pilot to turn right at taxiway A4, taxi to hangar 7 via taxiways A and J, and remain on local control frequency.

At 1937:11, ASH7138 was instructed to fly runway heading and cleared for takeoff. Between 1937:18 and 1937:32, the controller turned his attention to another Cessna in the pattern, ensuring that the aircraft had adequate spacing and was aware of ASH7138. At 1937:34, the pilot of N736GV informed LC that the aircraft had passed taxiway A4 and asked permission to exit at taxiway B. At 1937:42, the controller responded, "...no delay, turn immediately." The pilot acknowledged.

There were no further transmissions until 1938:16 when the local controller called ASH7138. At 1938:20, ASH7138 transmitted, "We got it, tower - we're going to need to go back to the gate, ASH7138." The controller instructed the pilot to turn off at the next taxiway to the right and contact ground control. At 1939:08, the local controller asked the pilot of ASH7138 if they needed to call the tower. The pilot responded, "uh, we're going to have to, uh, the airplane was on the runway, guys, uh... we'll call you on the ground." The ground controller gave the crew the tower phone number during the taxi, and the pilot subsequently called the terminal radar

approach controller-in-charge seeking information on what had occurred. The crew also notified the Mesa Airlines safety department, which contacted the Safety Board to report the incident.

Airport Information

This incident occurred on runway 6 near the intersection with runway 13/31. Runway 6 was 7600 feet long and 150 feet wide. Taxiway A4 was 1,450 feet from the threshold. Runway 13/31 crossed runway 6 at 2,700 feet from the threshold, and taxiway B intersected runway 6 at 3,100 feet from the threshold. After the incident, a runway inspection identified a set of fresh dual-tandem skid marks that appeared to have been created by ASH7138's main gear during the aborted takeoff. The marks began at 40.65114N / 075.44382W, crossed the centerline to the left, and extended approximately 1,225 feet along the left side of the runway, ending at 40.65334N / 075.44047W. Using the painted number "6" on the runway as an estimated position-and-hold point for ASH7138, the skid marks began about 2,200 feet into the takeoff roll.

Radar Data

Radar data for this accident was provided by ABE ATCT and was obtained from the ABE ASR-8 located on the airport. ABE does not have a ground movement radar system. Review of the ASR-8 radar targets showed no coverage on the aircraft surface. The last target for N736GV was detected at 1935:44 when the aircraft was 0.6nm from the runway 6 threshold and descending through 500 feet msl. There were no targets observed for ASH7138 at any time.

Personnel Interviews

Safety Board staff interviewed the two controllers on duty in the tower, the pilot of N736GV, and obtained written statements from the flight crew of ASH7138.

The local controller was hired by the FAA in September 2007, and began training at ABE tower in November 2007. He was certified on the local control position on August 12, 2008, and was also certified on the clearance delivery and flight data positions, but was not yet qualified to act as a Controller in Charge (CIC) or work any of the approach control radar positions. He stated that it was common to have developmental controllers who were not yet radar-certified assigned to a control position in the tower as long as one of the tower controllers present was qualified to act as CIC. The local controller had trained on the local control position from March 2008 to August 2008. During that time, he recalled training approximately one hour during nighttime hours. He stated that there was little to no training after sunset at ABE because of insufficient traffic. [Review of his training documentation showed that of his 81 hours training time on local control, 49 minutes were at night.] He did recall receiving a daytime airfield tour sometime during his training in order to orient himself with the airport layout, but he had never been out on the airport movement area at night.

The local controller had taken over the position about 20 minutes before the incident, and stated that he received a normal relief briefing. Just before the incident occurred, he watched N736GV on final. When the Cessna crossed the threshold, he instructed ASH7138 to position and hold on runway 6. The local controller then asked the pilot of N736GV where the wanted to park, then

instructed N736GV to turn at taxiway A4 and taxi to the ramp. He stated that he thought he saw the Cessna's landing light begin to turn onto taxiway A4. The controller then turned around to locate another aircraft in the pattern, which he stated was behind the tower on left downwind. He stated that he talked to the pattern aircraft, and then turned around and scanned the runway. The runway appeared to be clear. He then cleared ASH7138 for takeoff.

The local controller did not recall actually seeing N736GV clear of the runway. After ASH7138 began its departure roll, the pilot of N736GV stated that he had passed taxiway A4 and asked to turn off on taxiway B instead. After the local controller heard the Cessna pilot state that he had missed the turn, he was looking out the tower window trying to locate the aircraft but could not find it. He finally saw the aircraft as it was approaching taxiway B, and instructed the pilot to turn immediately. When asked what he meant by that clearance, the local controller stated that he wanted the aircraft to get off the runway even if it had to turn into the grass. He then saw ASH7138 come to a stop on the runway, called the crew, but received no reply. By that time, N736GV was on taxiway B clear of runway 6. The local controller stated that he did see ASH7138 pass the Cessna on the runway, but could not estimate the distance between the two aircraft as they passed.

The local controller stated that he was standing at the LC position at the time of the incident, working without a headset and listening to transmissions through the speaker. He had to turn away from the runway to view the other traffic in the pattern, but was watching the runway when he issued the takeoff clearance to ASH7138. Asked why he did not say anything to ASH7138 during the event, he stated that he saw ASH7138 decelerating on the runway and was trained not make transmissions to pilots in a critical phase of flight. Asked what caused the incident, the local controller stated that he just "...lost the Cessna in the lights." He turned to look at his pattern traffic and looked back at the runway. When he scanned the runway, he did not see the Cessna. The controller stated that he did not feel rushed during the operation and did not feel pressured to get ASH7138 airborne.

The ground controller entered on duty with the FAA in 2001 at Grand Forks ATCT, ND, and came to Allentown tower in April 2007. When the incident occurred, he was certified on all positions in the tower including CIC, but was still training on the radar approach control positions.

The ground controller first became aware of the incident when he heard a pilot say something unusual on the local control frequency. He did not completely catch what was said, but it did not sound right. Much later, after reviewing the voice tapes, he realized that what he had heard was N736GV saying that they missed the turn at A4. The ground controller said that, as CIC, he had a general knowledge of what was going on at the time in the tower. After hearing the transmission from the speaker, he looked up and saw the lights from ASH7138 at an angle on the runway. He stated that, "...it didn't look right," but he did not know what had happened. He heard transmissions from both N736GV and ASH7138, and then called the approach control CIC (who had overall responsibility for the tower and approach control) to report that, "...we had a situation up here in the tower." He also told the approach control CIC to expect a call from the crew of ASH7138. At the time, he did not realize that a runway incursion had just taken place. The ground controller only saw ASH7138 on the runway and did not see N736GV.

The ground controller recalled seeing N736GV before the incident, but wasn't sure if the aircraft was involved in whatever had just happened. He saw N736GV when it landed, and was planning on the aircraft turning off at taxiway A4. He had coordinated with the local controller for N736GV to taxi to the ramp on the local controller's frequency. Asked about his responsibilities, the ground controller stated that he is responsible for the movement areas, except for the runways, but said that he did not know where N736GV was at the time of the incident. His expectation was that N736GV would exit the runway at taxiway A4, but he did not confirm that the aircraft actually did so. He did not have any traffic for N736GV so he delegated authority to the local controller to taxi the aircraft to the ramp. The only other aircraft that the ground controller was aware of was ASH7138 who, at the time that he was dealing with N736GV, was not a concern.

The ground controller stated that he was standing at his control position when the incident occurred, but he did not specifically recall what he was doing. After the incident, he thought that ASH7138 had possibly collided with another aircraft. He did not see N736GV after the event, nor did he ask the crew of ASH7138 about what had happened.

The ground controller stated that his responsibility as tower CIC was to maintain awareness of the operation, keep the weather up to date, and monitor flow control and en route spacing initiatives. For all other issues, the tower CIC notifies the approach control CIC, who has overall responsibility for the facility. The ground controller stated that he gave the facility's phone number to the pilot so that the pilot could call the approach control CIC to discuss what had occurred.

When asked what he learned from this event, the ground controller stated that the next time he was assigned CIC duties, he would prefer that CIC be combined at local control and not ground control. The ground controller/CIC believed that he would be more aware of the operation as a CIC on the local control position.

The pilot of N736GV held a private pilot license with Airplane-Single Engine Land and Instrument-Airplane ratings. He stated that he had approximately 1170 hours total time, with 1100 hours in Cessna 172 aircraft. His aircraft was equipped with the required navigational lights as well as triple-flash wingtip strobes, which he stated were operating throughout the landing roll. On the evening of the accident, he, along with two passengers, was conducting a 14 CFR part 91 pleasure flight from Caldwell, New Jersey, to ABE. The flight proceeded normally as he approached ABE, where he was cleared for a right downwind pattern entry to land on runway 6. The pilot stated that when flying at night, he normally carries "...a little extra altitude" and therefore lands farther down the runway than he would in the daytime. After receiving clearance, he landed and was instructed to turn off at taxiway A4. He noticed that he was rolling past A4 at too high a speed to make the turnoff, so he continued down the runway. He did not attempt to turn off at A4 at any time. About 10 seconds after passing A4, he notified the tower that he had passed A4 and needed to turn off at taxiway B. The controller responded, "...turn immediately." The pilot turned the aircraft toward taxiway B and added power, moving to the right and away from the centerline. About three or four seconds later, the regional jet went past on the left side of the runway. The pilot reported that he had seen the news accounts of a 10 foot separation

between the aircraft, and stated that he could not provide a better estimate other than to say that it was close, with the two aircraft possibly as much as 30 feet apart. There was no damage to his aircraft, and no one was injured. He taxied to the ramp near hangar 7 and concluded the flight. The pilot stated that at no time did he hear the jet either being cleared into position and hold or being cleared for takeoff, and stated that he would have contacted the tower immediately had he heard the takeoff clearance being issued while he was still on the runway.

Mesa Air Shuttle provided the following crew statements obtained from the captain and first officer:

Captain (PF)

"On September 19, 2008 in Allentown, PA (KABE), we made an evasive move to avoid a catastrophic collision with a Cessna aircraft that was stopped on the active runway 6 for our ASH 7138 scheduled service from KABE to KORD. - We were instructed to hold short of Runway 6 while the Cessna aircraft landed on Runway 6. Tower made a call to GA [general aviation] aircraft on a left downwind to "extend" his downwind & that Tower will call his base to final turn because of departing regional jet traffic. We were then instructed by Tower that we were "cleared for takeoff on runway 6, runway heading." We ran the appropriate "Before Takeoff Checklist" & began our takeoff roll. At approximately 110 KIAS indicated the Cessna pilot made a radio transmission to the effect that he had "missed his turnoff." When we heard that transmission my FO noticed a white nav light off to the right of centerline that appeared to be an aircraft. He immediately made the call out to "ABORT, ABORT!!!" and we made an immediate high speed evasive abort with maximum braking and reverse thrust to the left side of the runway. At 220 ft per second, we missed the Cessna by 10 feet at 40 KIAS as we passed off his left wing. We notified the Tower of the aborted takeoff and the FAs and told passengers to remain seated. We taxied to the gate where we deplaned the passengers under normal operations. We then contacted SOC, KABE Tower, and appropriate personnel.

Preventative Actions: 1. We did not see any strobe lights illuminated from the Cessna aircraft that would have alerted to us to the aircrafts position. 2. This seemed to be a routine night operation takeoff. An aircraft lands and exits the runway and another aircraft is given clearance for takeoff."

First Officer (PNF)

"On September 19, 2008 in Allentown, PA (KABE) we had a high speed abort due to an Cessna aircraft on the runway during takeoff. After a normal preflight and before takeoff checklist we were holding short of Runway 6 at A5 waiting for takeoff clearance from tower. It was nighttime and the runway lights were turned on and appeared to be set on high intensity. After watching a Cessna land there was a delay and the Allentown tower controller instructed a GA aircraft doing touch and gos on downwind to extend his downwind for departing regional jet traffic. After that transmission, there was another pause and the tower controller said, " Air Shuttle 7138, fly runway heading, cleared for takeoff runway 6." I read back the clearance and we completed the before takeoff checklist. The captain (PF) taxied onto the runway and advanced the thrust levers and said, Set thrust". I (PNF) set takeoff power and we accelerated. I made the 80 knot callout

and the Captain replied normally. As I continued to scan the cockpit for any problems, I heard a radio transmission that said, "Tower, I missed my turnoff." I glanced outside and picked up a small white light slightly to the right of centerline. As we accelerated towards V1, I realized it was a white NAV light of an aircraft stopped on our active Runway 6. I immediately stated "Abort, Abort" and began to apply the brakes. The Captain retarded the thrust levers, applied maximum brakes, and extended the thrust reversers and began an evasive move to the left to avoid impact with the Cessna. We passed the stopped Cessna on the runway to his left and our right at about 40 knots with our wing tips about 10 feet apart. We came to a complete stop and the Captain made an PA to the notify FAs and to tell the passengers to remain seated. We then contacted the tower who was at a "loss for words" and stated that we exit the runway. We then contacted ground control and returned to the gate.

Preventative Actions: 1. More diligence from the tower to verify that all airplanes and vehicles are clear of the runway before clearing an aircraft for takeoff. 2. It did not appear that the Cessna had any strobe lights on that would have aided in our ability to identify the aircraft. 3. The runway lights may have been set to an intensity which made it difficult to identify a small GA aircraft half way down the runway."

The National Transportation Safety Board determines the probable cause(s) of this incident as follows.
The failure of both tower controllers to maintain awareness of the position of N736GV and ensure that the aircraft was clear of the runway before issuing a takeoff clearance to ASH7138.