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

March 19, 2009

ATC GROUP FACTUAL REPORT

DCA09MA026

A. AIRCRAFT ACCIDENT

Location: New York, New York

Date: January 15, 2009

Time: 1527 Eastern Standard Time / 2027 Coordinated Universal Time (UTC)[1]

Aircraft: US Airways Flight 1549[2], Airbus A320-214, N106US

Chairman: Ms. Sandra Rowlett
National Transportation Safety Board (NTSB)
Washington, D.C. 20594

Mr. Dan Strawbridge
Air Traffic Safety Oversight Service (AOV)
Federal Aviation Administration (FAA)
Washington, D.C.

Mr. Chad Sneve
Air Safety Investigator (ASI)
National Air Traffic Controllers Association (NATCA)
Atlanta, Georgia

C. SUMMARY

On January 15, 2009, about 1527 eastern standard time, US Airways flight 1549, an Airbus A320-214, registration N106US, suffered bird ingestion into both engines, lost engine thrust, and landed in the Hudson River following take off from New York City's La Guardia Airport (LGA). The scheduled, domestic passenger flight, operated under the provisions of Title 14 CFR Part 121, was en route to Charlotte Douglas International Airport (CLT) in Charlotte, North Carolina. The 150 passengers and 5 crewmembers

[1]All times in this report are expressed in eastern standard time unless otherwise noted.
[2] Air traffic control flight progress strip call sign indicated "AWE1549" or spoken as "Cactus 1549".

evacuated the aircraft successfully. One flight attendant and four passengers were seriously injured.

D. DETAILS OF THE INVESTIGATION

The air traffic control (ATC) group convened at the LGA Air Traffic Control Tower (ATCT) facility on January 16, 2009 where the group met with Mr. Leo Prusak, Air Traffic Manager, Mr. Bill Neuendorf, LGA Operations Manager, Ms. Mary Kate Strawbridge and Mr. Jeff Rich, FAA ATO-Safety. Mr. Brooke Lewis of the FAA's Office of General Counsel participated by phone.

After introductions by all present, Mr. Prusak summarized the accident sequence and provided a review of the facility's operation as it pertained to the accident. The group toured LGA tower, collected data from the facility, and interviewed the tower local controller, supervisor, cab coordinator, and Class B Airspace controller. On January 17, 2009, the group met at the New York Terminal Radar Approach Control (N90). Mr. Ed Garlick, support manager for quality assurance, provided the group with information on the radar system and assorted documentation. The group interviewed the operations manager in charge, operations manager, and front line manager. On January 17, 2009 the group concluded the field phase of the investigation. On January 23, 2009, the group interviewed the LaGuardia departure controller via telephone.

1. History of Flight

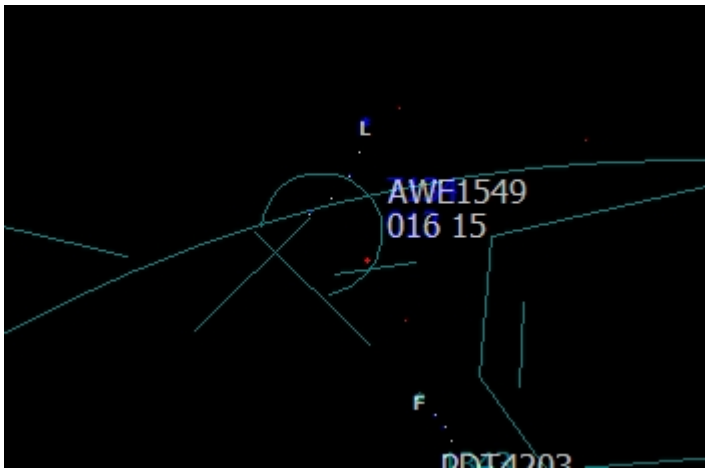
The LGA tower local controller (LC) was working all arriving and departing aircraft into and out of LGA Airport. Aircraft were landing on runway 31 and departing on runway 4. The LGA Tower Class B (CBA) radar controller was working all the visual flight rules (VFR) helicopters in the LaGuardia airspace. At the time of the accident, there were two helicopters flying over the Hudson River conducting tours of the area: N461SA and N152TA, both AS350s. The weather was visual meteorological conditions, wind 340 at 13, visibility 10 statute miles, ceiling broken at 3,500 feet, temperature -6, dew point -14, altimeter setting 30.23. There had been no pilot reports (PIREPs) of bird activity prior to the accident and there was no bird warning advisory on the automated terminal information service (ATIS) broadcast. At the time of the accident, the Airport/Facility Directory for LGA included the advisory “Flocks of birds on and in the vicinity of the airport.”

At 1524:54, the LGA tower controller cleared AWE1594 for takeoff from runway 4. The flightcrew was instructed to turn left heading 360 and climb to 5,000 feet mean sea level (msl)[3] in the pre-departure clearance. About one minute later, the tower controller instructed the crew to contact the New York (N90) Terminal Radar Approach Control (TRACON) La Guardia departure controller. As the airplane departed, the radar

[3] Aircraft altitude references are in feet above mean sea level (msl).

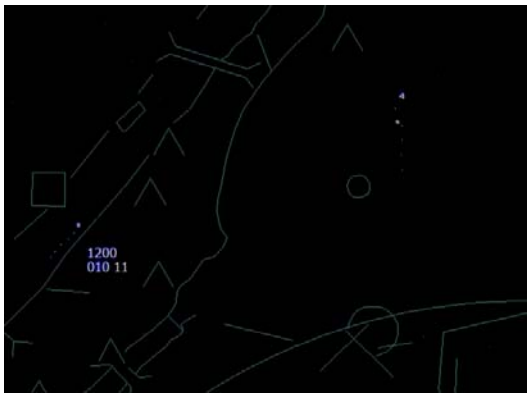
displayed the radar target with an “L” tag indicating that the aircraft was being tracked by the La Guardia Departure position at N90. Normal practice is for La Guardia local control to "quick look" (effectively share) the information associated with aircraft (call sign, altitude, and ground speed) to being controlled by the La Guardia departure controller.

At 1525:51, the pilot contacted the N90 La Guardia departure controller and advised they were at 700 feet and climbing to 5,000 feet. The controller radar identified the airplane and instructed the crew to climb to 15,000 feet. The crew acknowledged.



The departure controller then performed an automated handoff to the Liberty West controller, who was next to assume responsibility for the aircraft. At 1526:24, when the Liberty West controller accepted handoff of the aircraft, the position symbol for AWE1549 changed from “L” (indicating that the aircraft was being controlled by the La Guardia departure position) to “4” (indicating that the aircraft information was transferred to the Liberty West position.) The effect of that transfer of the tag was to remove any data tag information regarding AWE1549 (call sign, altitude, and ground speed) from the LGA tower radar displays because LGA was not quick-looking the Liberty West controller's traffic. From that point on, the LGA LC radar display showed only the "4" position symbol for AWE1549.[4]

[4] For more detailed information, see section 2, “ATC Radar Information”.



AWE1549 aircraft turned northbound and climbed as instructed. At 1527:01, when the aircraft's altitude was between 2,900 and 3,000 feet, recorded radar data from Newark (EWR) and Kennedy (JFK) radar sites indicated that the aircraft's path intersected a string of unidentified primary targets.[5] Subsequent review of radar replays showed that these primary targets were not displayed to the controller for reasons discussed in section 2 of this report.

At 1527:32, the departure controller instructed the flight to turn left heading 270. The pilot responded, "Ah this is Cactus 1539, hit birds, we lost thrust in both engines. We're turning back towards LaGuardia [Airport]." The radar controller confirmed the flight was returning to LaGuardia Airport and instructed the flight to turn left heading 220. The crew acknowledged.

At 1527:49, when the flight was at 3,000 feet, 5.7 miles north of LGA Airport, the N90 departure controller advised LGA tower to "stop departures got an emergency returning [to the airport]." The tower asked which flight was returning and was told "it's (unintelligible) fifteen twenty nine he uh bird strike. He lost all engines. He lost the thrust to the engines he's returning immediately." The sequencer controller[6] then contacted LGA and advised it was "Cactus 1549, that just departed." The sequencer controller then informed the tower that the crew would like to land on runway 31. The tower cab coordinator then advised the departure controller that "runway 4 is also available, if he needs it." Because the position symbol for AWE1549 was "4" with no other flight identification data visible to the LGA tower controllers, they did not know the location of the airplane. They believed the flight was further away and expected another call from N90 to advise when it was closer.

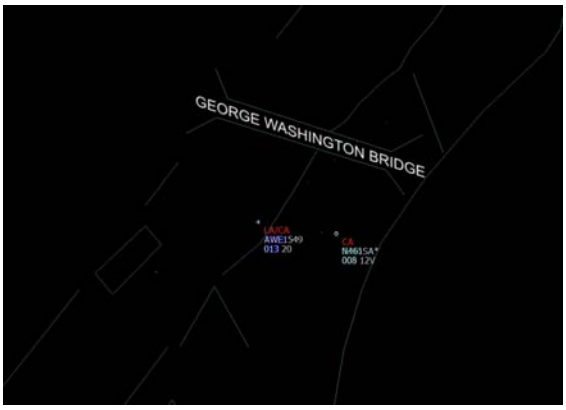
At 1528:05, the radar controller asked if the pilot wanted to land at LaGuardia on runway 13 and the pilot responded, "We're unable, we may end up in the Hudson [River]."

[5] See section 2, "ATC Radar Information". For more information about the timing and altitude of the bird strike, see the Flight Data Recorder and Cockpit Voice Recorder Groups' Factual Reports.

[6] All coordination conducted by the sequencer controller was recorded at the "coordinator" position. The sequencer was a non-control position located to the left of the departure controller.

About 30 seconds later, the controller said, "…it's going to be left traffic to runway 31." The pilot responded, "unable". The radar controller then asked what the pilot would like to do and advised "runway 4 is available if you want to make left traffic to runway 4." The pilot then stated "I am not sure if we can make any runway. Oh, what's over to our right? Anything in New Jersey? Maybe Teterboro." The controller confirmed that Teterboro Airport was off to their right side and asked if they wanted to land there. The pilot said, "yes". After the departure controller coordinated with the Teterboro tower controllers, he instructed the pilot to "turn right [heading] two eight zero you can land runway 1 at Teterboro." The pilot responded, "we can't do it." When asked which runway the pilot would like at Teterboro the pilot responded, "We're gonna be in the Hudson [River]". The controller said, "I'm sorry, say again Cactus."

At that time, N152TA and N461SA the two AS350 helicopters conducting air tour operations over the Hudson River, were, receiving radar advisories from the LGA Tower Class B airspace (CBA) controller. At 1529:10, a conflict alert activated between AWE1549 and N461SA as AWE1549 passed over the helicopter. Because of the conflict alert, the data tag for AWE1549 was automatically forced up on the LGA tower radar displays, making the tower controllers aware of the aircraft's position and altitude. Nine seconds later, the CBA controller advised the second helicopter, N152TA, of "traffic at your 12 o'clock and ah 5 miles southbound Airbus 320." The pilot advised he was looking for the aircraft. The controller responded, "…He's at 900 feet abeam the North Hudson. He's ah, looks like he's descending into the Hudson River." The pilot advised "Keep my eyes out, 2TA." The controller continued, "…he's 12 o'clock and two and a half miles." The pilot reported the airplane in sight and that he was "maintaining visual".



At 1529:53, the N90 departure controller advised AWE1549 that he had lost radar contact with the flight and advised Newark Airport was "off your two o'clock and about seven miles." There were no more communications with the flight crew. Also at this time, the cab coordinator contacted the LGA Port Authority and advised "OK, listen we're going to tell you something important. It's Cactus 1549. We see somebody low level in the Hudson River below 400 [feet]. You're gonna need to um alert the New York and New Jersey Port Authority police over there. He's in the Hudson River. He's just about a mile and a half north of the Lincoln Tunnel last sighted below 900 feet we

still got a target on him. Looks like he's low level."

At 1530:16 the CBA controller asked N152TA, "Is he (AWE1549) still flying?" The pilot confirmed the airplane was still flying. At 1530:34, the pilot of N461SA advised, "going down." About 10 seconds later the controller was advised, "He's in the water."

Both N90 and LGA tower personnel immediately notified the US Coast Guard, New York Police Department, and various other search and rescue operations. The Coast Guard replied, "We've launched the fleet."

2. ATC Radar Information

When monitoring flights in the LGA area, N90 and LGA tower use radar information from the JFK ASR-9 radar antenna[7] located at 40-38-22.44N / 073-45-59.2W, (13 degree west variation) at an altitude of 105.7 feet msl. AWE1549 was assigned transponder code "7134."

The ASR-9 radar system is primarily intended to track aircraft, with a limited ability to provide information about other phenomena of interest such as precipitation, birds, balloons, or other radar-reflective materials visible to the radar antenna. The preferred method of tracking aircraft is to use secondary radar, which depends on the presence of a transponder aboard the aircraft and positively identifies the flight being tracked, as well as clearly distinguishing it from natural phenomena. AWE1549 had a functioning transponder throughout the accident sequence and was tracked and identified at all times using primary and secondary radar.

According to FAA radar technicians and software programmers, the ASR-9 can also detect objects via their reflectivity to radar energy, with no requirement for a transponder. Targets detected strictly by reflectivity are known as "primary" returns. Primary returns may be aircraft, birds, anomalous propagation, terrain, ground vehicles, reflective structures such as bridges, or other objects that are not of interest for ATC purposes and should not be displayed to controllers because of their potential to be distracting or to interfere with the detection of phenomena of interest. To be useful, primary returns must be subjected to a filtering process that applies various rules to the observed radar reflections and eliminates those which appear to be extraneous for ATC purposes. In particular, the radar system attempts to identify targets that are moving consistently, remain visible from sweep to sweep, and have a ground speed of at least 30 knots[8]. If a primary return meets those criteria, it is likely to be classified as a "correlated" target, indicating a high level of confidence that it is of interest for ATC purposes. Other primary returns which do not meet the criteria for being declared correlated may either be discarded outright (such as returns produced by non-moving objects such as terrain or bridges) or may be classified as "uncorrelated" and forwarded to the display system because they cannot be conclusively rejected as clutter. Controllers are provided with the

[7] Sensor "00"
[8] N90 has a limit of 40 knots.

option to display only correlated primary targets or to display both correlated and uncorrelated primary targets.

Review of N90's recorded radar target data around the time of the reported bird strikes revealed a series of primary targets moving in a southwesterly direction toward the point of impact. However, a replay of the controller's display did not show any primary targets until the collision occurred. According to the recorded keyboard entries and filter selections in effect at the La Guardia Departure position at the time, the controller had chosen to display only correlated primary targets. Figure 1 shows the accident flight (maroon dots) and the correlated targets (red dots) as recorded by the JFK radar antenna between 1525 and 1528 EDT. Figure 2 shows the accident flight (maroon dots), correlated targets (red dots) and uncorrelated targets (black dots) that were near the accident flight for the same time period.

Figure 1. Accident flight (maroon dots) and correlated targets (red dots)

Figure 2. Accident flight, correlated, and uncorrelated targets.

3. Emergency Notification

At 1528:53, the LGA tower front line manager contacted the Airport Police and said:

> LaGuardia Tower with a call 43: Cactus fifteen forty-nine, it's a USAir Airbus departed runway 4 had a bird strike he reported and is coming back to land. He said he lost thrust in both engines and will land runway 31 in about uh, between five to seven minutes.

According to the LaGuardia Control Tower and Port Authority of NY & NJ Letter of Agreement dated April 5, 1992, a Call 43 is a Potential Emergency – Equipment Requested at Stand-by Position.

4. Interview Summaries

Patrick Harten **CPC, LaGuardia Departure Controller**

On January 23, 2009, the ATC group interviewed Mr. Harten by telephone and was represented by Mr. Dean Iacopelli, NATCA. According to his training records, he received training on "Bird Activity" on September 8, 2008. In response to questions, Mr. Harten provided the following information:

He reviewed the radar and voice recordings the day of the accident but not since.

Mr. Harten entered on duty with the FAA in August 1999 and was assigned to N90. He worked at the LGA Sector for 5 years, transferred to the EWR sector for 3 years and returned to the LGA Sector about 1.5 years ago. His operating initials were "NY". He had no previous military ATC experience and he was not a pilot. His medical certificate was current with no waivers or restrictions.

Mr. Harten's regular days off were Monday and Tuesday. He worked 1600-0000 on Wednesday. On the day of the accident, he was scheduled to work 1500-2300 but was called in early to work 1300-2100.[9]

He was on the LGA departure control position for about 15 minutes before the accident. He put in his preset settings for the radar display but couldn't recall the specific settings. He stated he liked to see 5 miles outside the airspace boundaries which was about 30 miles from LGA in some areas but only 5 in others. For LGA airport, his airspace was from the surface to 12,000 then from 5 miles from the airport up to 15,000 feet, which was the highest altitude he could climb aircraft.

He knew which aircraft would be departing the airport when he received a "rolling call" from the tower local controller. After the tower local controller (LC) cleared the aircraft for takeoff, the LC would push a button and say "(aircraft call sign) rolling." Flight progress strips were put in the strip bay in the order of departure by the N90 flight data controller. The flight data controller received the sequence from the tower clearance delivery controller.

When departing runway 4 from LGA aircraft were given two headings. If the aircraft was heading to the west or south departure gate, they were issued a left turn heading 360. If the flight was heading north or east, the pilots were instructed to fly runway heading. AWE1549 was headed towards BIGGY which was a west gate.

The LGA departure controller's duties included: climbing aircraft to the appropriate altitude, ensure the flights were at the correct departure gate, and ensure aircraft were separated. The controllers also sequenced Westchester departure or over-flight aircraft with the LGA departures to the departure gate. The sequence must be accomplished by the gate but preferably 5-10 miles before the gate.

He first became aware of AWE1549 when he received the "rolling call" from LC. He noticed nothing abnormal about the flight on takeoff or climb-out. The pilot reported climbing to 5,000 feet and Mr. Harten instructed him to climb to 15,000 feet. Another aircraft (from Newark East) called heading 150 at 5,000 and Mr. Harten climbed that aircraft to 10,000. He then turned AWE1549 on course to a 270 heading. The pilot responded, "Double bird strike, lost thrust both engines, and need to return to the airport." Mr. Harten directed him to turn left heading 220 to get him back to the airport then advised the supervisor of the emergency situation. He used the direct line to advise LGA tower to stop departures because AWE1549 had to return immediately.

[9] According to the personnel log, his actual hours were 1230 – 2045.

As the flight was losing altitude, Mr. Harten believed runway 13 would be best and he suggested that runway to the pilot. The pilot replied, "Unable". Mr. Harten thought the pilot wasn't set up for that runway so he asked if the pilot would like left traffic for runway 31. The pilot responded, "Unable". Over the loud speaker, Mr. Harten heard LGA tower state that runway 4 was available which he offered to the pilot who said, "Unable". He asked the pilot where he would like to land and the pilot asked about the airport off the right side. Mr. Harten replied it was Teterboro (TEB), and asked if he wanted to land there and the pilot replied, "Affirmative". He coordinated with TEB thinking runway 1 was the best option due to the wind and the airport being in the northeast flow. He left the speaker line open so those controllers could hear the communication with the pilot because there was no time to relay information to them.

Mr. Harten then instructed AWE1549 to turn right heading 280 for runway 1. He believed the response was "can't do it, going in the river". That was the last transmission he heard from the flight crew.

Mr. Harten explained that it was typical to climb aircraft to 15,000 feet off runway 4 on initial contact. It was also typical to do an automated hand off with the next sector controller right away because controllers don't want to get behind. To do the coordination early was better for both controllers. When the next sector controller accepted the handoff, it was not a transfer of control but a transfer of information. This gave the current controller permission to continue the aircraft on course. Transfer of control occurred when the flight was 5 miles from the departure gate. If the handoff was not accepted, the controller needed to keep the aircraft in their own airspace. He stated that he wasn't sure if the handoff procedures were in the standard operating procedures manual but that was how everyone was trained; all controllers did it that way. If the automated handoff was delayed, it would be a hard habit to break but it would not be a severe impact.

He was not aware that once the aircraft was handed off to the next sector that the tower controllers no longer received information on the radar displays about the flight.

Mr. Harten did not point out the aircraft to other sectors. He verbally advised the final controller that the flight was coming back. He was relieved pretty quickly after the accident, within a couple of minutes. When asked whether it would be a hindrance or benefit to have the capability to make a keyboard entry to alert other sectors and adjacent facilities of an emergency aircraft, he said that it would have been a benefit.

Prior to the accident, there were no reports of birds in the vicinity. When birds were in the area, he could have received a pilot report but that didn't happen often, maybe a handful of times per year. Once Mr. Harten received a report, he said he would pass the advisory to the tower, and then verbally issued the PIREP to other crews. The PIREP was not put on the arrival ATIS.

In his 10 years at the facility, he had seen a primary radar return from birds but it was

rare, very rare. He didn't change anything on the radar display to see the birds (change from correlated to uncorrelated) the primary target was either there or it wasn't. Controller saw false primaries all the time. If a primary target matched a pilot report of where the birds were seen, he would say that's probably it.

He did not recall seeing any low altitude alert or conflict alert on AWE1549. If there was a conflict alert, it wasn't while he was working.

When he advised LGA tower of the flight returning, he expected them to basically keep the runways open and get the emergency equipment out. He thought they could see the aircraft.

He could have pointed out the aircraft to other sectors by using the keyboard entry **[sector symbol]. Mr. Harten stated he couldn't point out the flight to the LGA local controller only the CBA controller ("Q" symbol). He was not aware the LC position identifier of "I".

Mr. Harten stated that AWE1549 displayed a full data block for the entire flight. He received no primary data information for the birds when the pilot reported the bird strike.

Jason Dolney **LGA Class B Airspace (CBA) Controller**

He was represented by Bill McLaughlin, NATCA. Mr. Dolney's operating initials were "MD". He had all the tower certifications and was certified as a controller-in-charge. He had no military air traffic control experience. He had a private pilot's license with commercial/instrument ratings on single engine land aircraft. He had approximately 270 hours but he was not current.

The day of the accident he was on duty at 1430 and was assigned the CBA position. He set up the radar display with the range on 12 miles and the altitude filters were surface to 4000 feet. There was no precipitation in the area. The JFK radar antenna was used for that radar. His position was provided 02XX subsets for transponder codes and the position symbol was "Q". He indicated that he was responsible for flights generally in a 6 mile radius, surface to 2000 feet. He indicated that further south there was less coverage and 500 feet was usually the lowest and they do get coverage on fixed wing airplanes.

Traffic at the time of the accident was very light. He became aware of AWE1549 when he overheard the cab coordinator state that departure aircraft were stopped for an aircraft returning to the airport, it was a Cactus. He didn't hear the flight numbers. He turned his attention to the middle of the tower cab to see where the aircraft was coming from. He then learned that the aircraft had lost thrust in both engines. He turned back to the radar display and picked out departure tags to determine the location of the aircraft. At that time, the position symbol for the sector responsible for AWE1549 was "4" (Liberty West). He didn't see anything for the accident flight until the conflict alert activated. At the time, the aircraft was in the upper left quadrant of his display and he had started

looking in the upper right.

When asked if the aircraft was given a runway heading or a left turn why he would look to the right he said that if an aircraft has a problem, the radar controller would "put him in holding but any location is fair game". They would not put the aircraft in the departure corridor. He would see targets assigned to the Liberty West sector only if he actively "slewed" on the target.

He did not know what sector "4" indicated. (ATC group learned it was Liberty West when interviewing N90 personnel.)

At the time of the accident, he was responsible for 2 helicopters, N461SA and N152TA both AS360 aircraft, flying over the Hudson River that were conducting tours. Mr. Dolney stated that the conflict alert activated in the vicinity of the George Washington Bridge when N461SA was eastbound and AWE1549 was southbound on the Hudson River. He said the data block for N461SA covered the primary target and information for AWE1549. He realized it was the emergency airplane when AWE1549 passed behind the helicopter. He then saw the airplane out the window south of the George Washington Bridge. He said the airplane was 1 mile south of the bridge at 800 feet. He alerted the cab coordinator and supervisor of the airplane's location.

He then recognized N152TA was at the south end of the Hudson River over the Lincoln Tunnel. He began issuing N152TA traffic on the A320 and the helicopter reported the Airbus in sight.

He asked N152TA the status of the A320 and the airplane was still flying. He advised traffic was 2.5 miles. AWE1549 was at 400 feet and the helicopter was at 1500 feet. A female voice on N152TA reported that the airplane was in the water. He asked her to remain in the area to help. Both helicopters joined together at the Lincoln Tunnel and the pilots advised that the airplane was afloat, rafts were inflated, people were on the wings, and a ferry was inbound. After a few minutes he advised the helicopter pilots that their assistance was no longer needed and they could continue on.

He did not conduct any coordination. He just relayed information to the supervisor and cab coordinator. After the temporary flight restriction (TFR) area was set up he confirmed that Newark Tower personnel knew about it so they wouldn't send him any airplanes.

Prior to receiving the conflict alert he didn't know the location of AWE1549; he couldn't see the target it looked like a departure or over-flight.

He stated that when he worked local control, he would receive bird advisories about 3 times a week. He would receive bird advisories about 3 times a year when he worked CBA. Typically they get reports on airships or moored balloons—manmade things. He indicated that bird activity was put on the ATIS shortly after the accident but they don't put that on the ATIS often. He said they don't have a higher occurrence of birds than

another airport not close to the water. In his opinion, he thought birds issues would occur more often.

Well after the accident he received a briefing from the local controller who advised a pilot reported birds on final to runway 31 at 400 feet.

Mr. Dolney stated that he overheard someone say AWE1549 ingested birds while the airplane was still airborne.

Mr. Dolney stated that no one advised where AWE1549 was located. He said he received the conflict alert when the aircraft and helicopter were separated by 500 feet and 1 mile. The conflict alert didn't activate when the aircraft were headed at each other, it occurred after the first helicopter passed the A320.

Helicopters were not restricted over the Hudson River, they had 3 routes described in a letter of agreement the facility had with the city. These helicopter's routes were point to point, though some criss-cross over Manhattan.

He stated that they saw the aircraft arrival tags but departure tags were limited data tags. At about 5000 feet, when the symbol changes to 2, 4, 6, 8, he doesn't see the information any more.

Mr. Dolney said one safety improvement could be that N90 controllers use better phraseology when advising of an emergency. He stated they didn't know the location of the airplane. They found it because the conflict alert activated. Everyone in the tower cab thought the airplane was further out.

A'Kin Boyd **Front Line Manager**

The ATC Group interviewed Mr. Boyd on January 16, 2009. Mr. Boyd was represented by Mr. William McLaughlin, LGA OM. In response to questions presented by the group, Mr. Boyd provided the following information:

Mr. Boyd started his FAA career on July 27, 1997. His operating initials were "AY". He had no prior military service but was a private pilot rated for single engine land with approximately 75 flying hours.

When asked if he had set up the equipment in the tower upon assuming the watch Mr. Boyd stated that everything was working fine so he did not change anything. He said the weather was clear VFR at least 5,000 and 5 miles. He stated that the traffic was light, typical for that time of day. He couldn't recall if there were any flow restrictions but thought there may have been some in-trail spacing to CLT.

When asked if he noticed anything unusual about AWE1549 on departure he replied that he had not. Mr. Boyd stated that he found out that there was a problem when the cab coordinator told him that AWE1549 was returning to LGA because he lost thrust in both

engines. He said that he advised the port authority so they could have the emergency equipment standing by. He did this through the Emergency Alert Notification System, the red crash phone that was located in the tower. He said that these phone conversations were recorded and included notification to the Port Authority (PA) Police, PA Operations and a host of others, however only the PA police acknowledged any communications.

Mr. Boyd said he tried to locate the emergency aircraft on radar and did so when the flight was 5 or 6 miles north of LGA passing the George Washington (GW) Bridge. He then pointed the aircraft out to the CBA controller so that he could point it out to the tour helicopters that were in the area. One of the helicopters saw AWE1549 and confirmed that it had water landed in the Hudson River.

After the aircraft went down all arrivals and departure aircraft were stopped. Mr. Boyd said that everything came to a grinding halt. He said he advised someone to call PA for assistance. He said that not all communication lines were recorded. He said that he then advised the operations manager and air traffic manager of the accident.

Mr. Boyd said that within 5 minutes he had the LC relieved because of the accident and he was next in the break rotation. After the LC was relieved Mr. Boyd asked the LC if he was okay and he said he was fine.

Mr. Boyd said that N90 advised them of the returning aircraft over the shout line. Once the cab coordinator activated the button for the shout line, the information then went into his headset. When asked if it was typical for controllers to wear headsets he stated that it was.

Mr. Boyd said that the aircraft was viewable out the window after seeing the aircraft on radar. He said that he had not noticed the aircraft until after being advised of the emergency. When asked if he had noticed any bird activity before or after the emergency, he stated that he had not. When asked if he thought birds had caused the accident he said he didn't know what to think. He thought that birds were not a big issue. He said that there were no bird advisories on the ATIS before the accident, but an advisory was put on the ATIS after the accident because of a PIREP that was received indicating birds on final for runway 31.

Mr. Boyd was asked in which direction the airplane was flying when he saw it and said that it was heading southwest bound. He said that at first glance AWE1549 was between 8 and 900 feet. When asked, Mr. Boyd could not recall if there was a low altitude alert. He said that he could not recall the distance between the helicopter and AWE1549. He did observe a conflict alert; however, stated that the CBA controller informed him that the helicopter was maintaining visual separation with the emergency aircraft.

Mr. Boyd could not remember if he had communicated with N90. He stated that the cab coordinator was relaying the information that he received from N90. He told him of the type and nature of the problem, which was lack of thrust from both engines. N90 told them that the aircraft's intentions were to return and land on runway 31. They told N90

that runway 4 as well as any other runway was available because traffic had been stopped.

The tour helicopters were assigned codes from the 0200 block for VFR traffic advisories. The NYPD helicopters had been assigned discrete codes in the 0300 block as a result of 9/11.

William McLoughlin Certified Professional Controller, Cab Coordinator

The ATC Group interviewed Mr. McLoughlin on January 16, 2009. Mr. McLoughlin was represented by Mr. Roger Brown. In response to questions presented by the group, Mr. McLoughlin provided the following information:

Mr. McLoughlin began his FAA career on May 19, 1987, and had no prior military experience nor was he a private pilot. His operating initials were "MW". He was facility rated at LGA. He stated that he was required to wear corrective lenses and was doing so at the time of the accident. At the time of the accident, he was working the cab coordinator (CC) position. He said it was routine for tower controllers to wear headsets while working that position.

On the day of the accident he arrived at the facility at 1435 and within 5 minutes was assigned to the CC position. He stated that he became aware of the emergency when N90 called to stop departures due to a bird strike on AWE 1549. He indicated that he had been on position for approximately an hour. He said he clarified the call sign as it had been previously identified as AWE1529. He said he then advised the FLM and put the visual aids in place. This was identified as a red flight progress strip with the word "STOP" printed on it that was placed in the strip bay. Although departure flights were stopped, arrival flights continued.

N90 then called and advised that AWE1549 had lost thrust in both engines and was declaring an emergency and had requested runway 31. After he conferred with LC and GC, Mr. McLoughlin told N90 that runway 4 was also available. He stated that there were less than 10 aircraft in line for departure. He said this was a normal to light workload. He said that the weather was VFR, but vehicles were still entering the runway for treatment due to an earlier snow.

When asked if he saw AWE1549 out the window as the flight was returning to the field he said that he did. Mr. McLoughlin stated that the CBA controller noticed the data block on the radar display when the airplane was just over the George Washington Bridge about 800 feet. When the airplane was at approximately 3 to 400 feet, the tag went into coast mode as they saw the aircraft go behind the skyline.

The CBA controller reported that a helicopter had advised that AWE1549 had gone down in the river. He then called the Port Authority Operations at LGA and suggested they notify the New Jersey Port Authority and the New Jersey police via a recorded landline. The front line manager and supervisor traffic manager had already called the emergency

via the 44 circuit.

A conflict alert activated between a VFR helicopter and AWE1549 and the CBA controller advised the helicopter pilot of the Airbus. The data track on AWE1549 was lost at approximately 3 miles south of the George Washington Bridge. Mr. McLoughlin could not recall seeing a low altitude alert. At that time he was not aware if the helicopter had AWE1549 in sight.

Mr. McLoughlin was not aware of any bird issues before or after the AWE1549 accident. He said that he was probably on position for about another hour after the accident.

Mr. McLoughlin was asked if he monitored LC frequency when performing CC duties. He stated that he usually monitored Ground Control because of the complexity of that position. He said that at LGA, Ground Control was the more challenging position. He rarely monitored the CBA position and reiterated that there was no requirement to monitor any position. He stated that the CC was there to answer phone lines and coordinate with other facilities. The CC was an extra set of eyes watching the intersection of the runways.

Mr. McLoughlin was asked which direction AWE1549 was heading when he observed him and he replied southbound. He wasn't aware of any other airplanes departing after AWE1549.

When asked if he would have done anything differently in this situation he said that after reviewing the tapes he realized he had forgotten to give his operating initials a couple of times and would do so in the future.

Anthony Wajda **Certified Professional Controller**

The ATC Group interviewed Mr. Wajda on January 16, 2009. Mr. Wajda was represented by Mr. William McLoughlin. In response to questions presented by the group, Mr. Wajda provided the following information.

Mr. Wajda began his FAA career on August 13, 1990, and transferred to LGA on October 3, 1998. His operating initials were "TW". He had no previous military experience and held no pilot ratings. He held a current medical certification with the restriction to wear eye glasses or contacts to correct for near sightedness.

He began his shift on the day of the accident at 1433 and was assigned to the LC position. He said that the weather was VFR with the winds out of the north or northwest at 10 to 15 knots. He said that there were a few clouds with no precipitation and didn't recall any wind gusts. Mr.Wajda stated that the departure traffic volume was light and the arrival traffic was light to moderate. He said there was no controller training in progress.

Mr. Wajda said that the only change he made to the equipment setup was to lower the map down with the range set on 10 miles. His filter limits were set from the surface to 4000 feet msl. He said he does that because LGA airspace goes from the surface to 2000 feet and the controllers wanted to see the inbound aircraft prior to entering their airspace.

Mr. Wajda said that they received flight progress strips on all outbound and inbound aircraft. He reported that all equipment was working as required. He reported that LGA was operating off the JFK ASR-9 antenna, although they did not have control of which sensor was in use as it was selected by N90.

Mr. Wajda was asked when he was first aware of AWE1594 and replied when he saw him taxiing toward runway 4 for departure. GC had put the strip in the LC bay and pulled the strip out partially indicating the aircraft was monitoring his frequency. He subsequently taxied the aircraft into position and then cleared him for takeoff. Everything appeared to be a routine departure and the aircraft was changed to departure frequency.

Mr. Wajda stated that he heard over the shout line that AWE1529 was coming back and he asked the CC if they meant AWE1549 (he pulled out the flight progress strip). He stated that he didn't know what type of emergency it was and said that he never saw the aircraft after he switched it to departure. He said he later heard through CC what had happened.

Mr. Wajda was asked if he ever saw a low altitude or conflict alert relative to AWE1549 and he stated that he had not. He said that he heard the audible but stated you just look at your aircraft and if you didn't see them alarming you assumed it was at the CBA position because with all the helicopters those alerts activated all day long.

Mr. Wajda was fully certified at LGA. He stated that aircraft using transponder code 0200 receive conflict alerts and he did not inhibit that function. Mr. Wajda was asked if he had ever issued conflict alerts for news station helicopters and he responded that he had. He stated that he issued an alert on any aircraft that received one.

Mr. Wajda stated that the CBA controller would have worked any helicopters and LC worked arrival and departure flights to the airport. When asked if there had been any departures after AWE1549 he replied one or two. He stated that he had had no bird activity during this session on LC.

Mr. Wajda stated that the flight data or if combined, the flight data/clearance delivery controller, recorded the ATIS. He explained that the flight data/clearance delivery positions were usually split if the staffing was available. He said that the current staffing was 40 percent developmental controllers and "getting worse".

Mr. Wajda said that at the time of the accident, the controller position symbols were "L" (departures), "F" (Arrivals), "Q" (CBA), "I" (LC), and "V" (HARP). He was asked if the

CBA position ever worked fixed wing aircraft and he said that more so on the weekends usually for float planes.

Medical certificate was current with no limitations. There was a special consideration for a medical condition and/or medication.

John Lucia **Operations Manager in Charge**

The ATC Group interviewed Mr. Lucia on January 17, 2009. Mr. Lucia declined representation. In response to questions presented by the group, Mr. Lucia provided the following information:

Mr. Lucia was not certified on any operational positions within the facility. Mr. Lucia described his duties as an overall manager of the radar room. He was responsible for answering the phones, keeping the logs and monitoring the general flow of aircraft. Mr. Lucia signed in to work at 1430 for an 8 hour shift.

Mr. Lucia was a first line supervisor to the Newark area front line managers and said that he was familiar with the departure controller, Patrick Harten, which he declared was a very good controller. Staffing was pretty good that day.

The first indication of a problem came from the Newark Area FLM, Mike Santos, who said that there may be a problem in the LaGuardia Area. Then the LaGuardia Area FLM, Steve Maratta, said that there is one in the water or going in and then he asked Mr. Lucia to call the Coast Guard. Mr. Lucia figured that LaGuardia Tower already called the Coast Guard so Mr. Lucia called the NYPD Aviation Unit first then he called the Coast Guard. The Coast Guard response was that they had already departed the fleet.

Mr. Lucia then called LaGuardia Tower to verify that they made the ECL (Emergency Conference Line) call. Then Mr. Lucia called the FAA's ROC.

Mr. Lucia did not witness AWE1549 flight as it happened. He did not review the audio or "official" radar playback. Mr. Lucia stated that there was a problem with the portable phones which made him use alternate phone lines which were not recorded.

Jeffrey Brooks **Operations Manager**

The ATC Group interviewed Mr. Brooks on January 17, 2009. According to his training records, Mr. Brooks received training on "Bird Activity" on September 8, 2008. Mr. Brooks arrived at work at approximately 1030 to perform some administrative duties and was scheduled to work the 1300-2100 shift. He stated that he liked to align his schedule with the controllers. Mr. Brooks was current on position until approximately 2 months ago.

He stated that his duty was to monitor the operations in the control room. He became aware of AWE1549 about 1.5 minutes before the accident. He was talking to a new

developmental at the desk when Mr. Brooks saw someone run from the LGA to the EWR area and realized something was awry. He then observed the supervisor at the departure display and was told that there was an emergency. Mr. Brooks walked over to the LGA sector and was told that Cactus was the emergency. He then observed the target near the Empire State Building then saw it go into coast. He picked up the Sequencer line and asked LGA tower if they had the aircraft in sight. The tower said that they did not have the aircraft in sight and that the aircraft was in the water and everyone had been notified. Then he notified the STMC that the aircraft went into the river. He pulled up the radar data on his personal laptop to find the last radar hit of AWE1549.

Mr. Brooks then notified the staff manager of the situation and went to review the tapes.

Steven Maratta **Area Supervisor/Sequencer**

The ATC Group interviewed Mr. Maratta on January 17, 2009.

Mr. Maratta stated that he first become aware of AWE1549 when the departure controller turned the aircraft west and the controller advised that the pilot stated that he had multiple bird strikes and lost thrust in both engines. Mr. Maratta asked the departure controller to ask the pilot his intentions. The pilot stated that he wanted to return to LGA. The radar controller issued a 220 heading to sequence the flight and Mr. Maratta told other controllers to provide spacing but that had already been accomplished. When AWE1549 was at the George Washington Bridge, Mr. Maratta plugged into LGA departure position to assist the controller and heard that the crew state that they might not make LGA airport. The pilot then asked whether Teterboro Airport was to their right and the departure controller confirmed it was.

When Mr. Maratta heard the controller coordinate the arrival of AWE with TEB, he called EWR to stop departures. As this coordination was finished he then heard the pilot state that he would not make TEB and was putting it down in the Hudson River.

Mr. Maratta then advised the OM that there was a water landing and to notify Coast Guard and emergency services. He stated that he called LGA tower to see if runway 4 was available due to wind.

At 300 feet the aircraft was below radar coverage. The controller advised radar contact lost and asked if the flight wanted to land at Newark Airport but there was no response. They lost communications when they lost radar contact.

Mr. Maratta went to the podium to observe the aircraft as it descended into the river then climbed. As the aircraft descended over the river Mr. Maratta told a developmental to go to the Newark area and ensure the airspace was sterilized because the aircraft was pointed in that direction when radar contact was lost and the flight may head in that direction. Mr. Maratta then asked the final controller if they saw the aircraft and the final controller said the aircraft was in the Hudson River abeam the USS Intrepid.

He stated he was standing five feet behind the departure controller and saw the data tag at 3100-3200 feet, 5 miles north of LGA when the controller turned the aircraft heading 220. He also saw a low altitude alert before the flight hit the water. Mr. Maratta stated that the conflict alert may have activated due to the helicopter in the area. He did not issue a warning because he received the warning after radar contact was lost and the data tag was in coast. "It was pretty apparent that the airplane was going down in the water."

He did not coordinate with the CBA controller but stated someone else may have. It is at the controller's discretion which position to contact in the tower.

He did not have much conversation since the accident. Mr. Maratta stated that he did not know that the tower controllers were unaware of the aircrafts position. He stated that the cab coordinator sounded as if he knew where the aircraft was located and he was surprised that the controllers were unaware because the flight had just departed, 40 seconds earlier.

Sandra L. Rowlett
ATC Group Chairman