

**NATIONAL TRANSPORTATION SAFETY BOARD
OFFICE OF AVIATION SAFETY
WASHINGTON, D.C.**

February 4, 2005

**SURVIVAL FACTORS GROUP CHAIRMAN'S
FACTUAL REPORT**

I. A. ACCIDENT : DCA05MA004

LOCATION : Kirksville, Missouri
DATE : October 19, 2004
TIME¹ : 1945 Central Daylight Time (CDT)
AIRCRAFT : Jetstream 3200, Flight 5966,
N875JX, Operated by Corporate
Airlines, Inc.

II. B. Survival Factors Group

Group Chairman : Cynthia L. Keegan
National Transportation Safety Board
Washington, D.C.

Member : Rob Carter
Air Accidents Investigation Branch
Farnborough, United Kingdom

Member : Jan Risheim
Federal Aviation Administration
Washington, D.C.

III. C. SUMMARY

At approximately 1945 central daylight time (CDT), October 19, 2004, a Corporate Airlines, Inc. operating as American Connection flight 5966, BAE Systems Jetstream 3200, N875JX, operating in accordance with 14 CFR Part 121 crashed while the flight was on approach to the Kirksville

¹ All times herein are local time and based on the 24-hour clock unless otherwise noted.

Regional Airport (IRK), Kirksville, Missouri. The approach into IRK was a non-precision LOC/DME Runway 36 approach. Eleven of the 13 passengers and the 2 flight crewmembers were fatally injured. The two surviving passengers received serious injuries. The airplane was destroyed by impact and post-impact fire. The reported weather was visibility 3 miles in mist and an overcast ceiling at 300 feet.

IV. D. DETAILS OF THE INVESTIGATION

1. Aircraft Configuration

The Jetstream 3200 was configured with 19 coach class passenger seats and 2 cockpit flight crew seats. The coach seats were configured with a row of 7 single seats on the left side of the cabin and 6 sets of double seats along the right side of the cabin separated by an aisle. The main cabin door was located on the left side of the cabin behind the last passenger seat. There were two overwing emergency exits at row 4 on either side of the cabin. See Figure 1, Jetstream 3200 Interior Diagram.

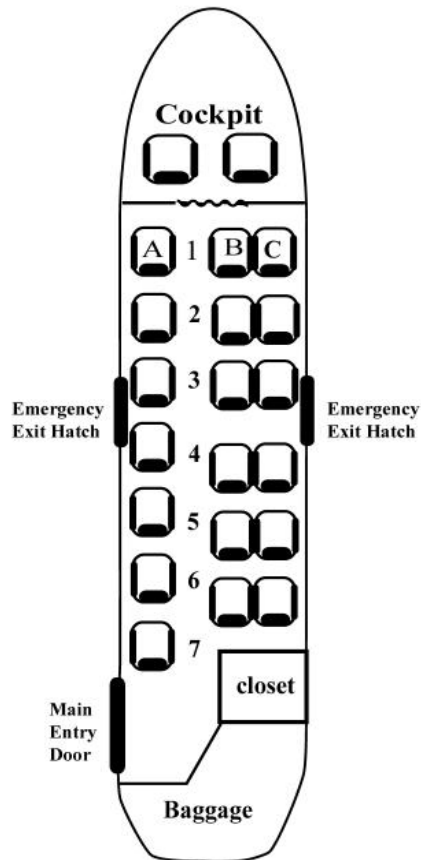


Figure 1. Jetstream 3200 Interior Diagram

2.0 Crew Information

See the Operations Group Chairman’s Factual Report for information about the flight crew.

3.0 Passengers

An adult female and an adult male passenger survived the accident. On October 21, 2004, the Survival Factors Group Chairman interviewed the two surviving passengers. The Survival Factors Group Chairman and the NTSB Investigator-In-Charge interviewed the survivors on October 24, 2004. The interviews are summarized below:

3.1 Passenger Interviews

Male, seat 4C
Height: 6 feet 0 inches
Weight: 163 pounds
Age: 69 years old

He was seated on the right side of the airplane next to the right overwing emergency exit. He was the last passenger to enter the airplane before the flight departed St. Louis. His coworker was seated in a seat across from his, next to the left overwing emergency exit. Before the airplane departed St. Louis the captain came into the cabin and sat in seat 4B and spoke to all of the passengers about the airplane's safety features (how to buckle their seat belts, the location of all the exits, and how to open the emergency exits). The captain asked him if he would be willing to operate his emergency exit if required and he told the captain that he was able to do so.

There was a curtain that was partially draped across the entryway to the cockpit, and when they departed St. Louis he saw the pilot give a "thumbs up" signal to someone in the back of the airplane. One of his colleagues was seated in the aisle seat in front of his seat. Most of the passengers on the flight knew one another because of they were affiliated with the Kirksville Medical University.

He looked out his window during the flight and noticed that it was overcast. He saw landing lights come on and begin to flash, and he heard the landing gear come down. The pilot made an announcement for passengers to put their trays tables up and place their seat backs in the upright position. He thought the airplane made a slow turn to the left when they were about 3 or 4 miles from airport.

Just before impact he heard a group of women who were seated behind his seat talking and having a "grand time." There was no forewarning prior to impact. After the airplane made the slow turn to the left, it suddenly hit something that made a terrible noise and the airplane slowed down. Then it felt like the airplane was rushing through trees in rapid succession and it felt like the airplane twisted, and then it slid to a halt. He thought he heard passengers screaming as the airplane clipped the trees,

and when the airplane came to a stop he thought he heard a passenger moaning.

A woman in a red sweater was on top of him, and she was not moving and it was very difficult to push her body off of him because he realized his hip was broken. He heard his coworker call out his name.

The airplane was in a slight nose down attitude and there was a lot of smoke and debris throughout the cabin. He saw light coming from an opening in the left side of the fuselage and he got out of his seat and went across the aisle to the opening in the fuselage. He did not remember opening the left emergency exit hatch. He thinks it may have separated from the airplane because he could see a large hole in the cabin where the left emergency exit hatch had been.

He forced himself out of the opening and fell head first to the ground. He recalls dropping about 8 feet to the ground and hit his right elbow during the fall. He had slip-on shoes that came off when he evacuated the airplane. When he stood up he realized that the airplane was elevated off the ground, and because his hip was broken, he could not help his coworker out of the airplane. The airplane appeared to be elevated by the trees and he noticed that the left wing had separated from the airplane.

There was a fire in rear of airplane and he heard explosions coming from the airplane. He heard hissing, and popping noises and he saw big balls of blue and black smoke coming from the cabin. He could not see or hear any "signs of life" coming from the airplane. He dragged himself away from the airplane and into a briar patch. His left hip was "really hurting." He dragged himself farther away from airplane and his left foot hurt so much that it "felt like it was on fire". He continued to hear explosions coming from the airplane.

A piece of burning liquid landed on his left ankle and seared into his skin. He was about 10 feet from the burning airplane and he was afraid that the heat from the fire would burn the surrounding brush so he rolled onto his back and pushed himself farther away from the airplane. He managed to move about 25 feet from the burning airplane, and noticed that as the airplane burned it collapsed downward and settled toward the ground.

As he lay in the briars he saw a bigger airplane fly right over him. He estimated that about 45 minutes the fire started to subside and he thought he heard sirens, and a little while later he heard voices coming from what sounded like a walkie-talkie. He heard a women's voice crying "help" and he realized that it was his coworker's voice. He could not shout for help because his abdomen was bruised. One rescuer walked past him and did not see him in the briars. When rescuers found him, someone put a coat around him.

The rescuers put him on a spine board and carried him out of the woods, through a cornfield, and across a ditch, and then put him very gently into an ambulance. He asked if the rescuers picked up a woman and he was told that she was right next to him in the ambulance. He looked over and was relieved to see his coworker.

His seatbelt was buckled during the flight, but he did not remember unbuckling it before he evacuated the airplane. He sustained a broken left hip and lacerations on his forehead.

This passenger sent a written statement to the NTSB on December 4, 2004. See Attachment 1 of this report for a copy of his statement.

Female, seat 4A
Height: 5 feet 2 inches
Weight: 145 pounds
Age: 44 years old

She was seated on the left side of the airplane next to the left emergency exit. Before takeoff, the pilot came back and sat in 4B, the seat next to her coworker and gave everyone the safety briefing that included information about the oxygen masks, seatbelt use, and exit locations. The pilot seemed relaxed and alert; and explained to her and her coworker (in seat 4C) how to open their emergency exits. The pilot also asked she and her coworker to read the safety-briefing card that was in the seat pocket in front of their seats, and she took out the card in the seat pocket and read it before the flight. She also heard a safety briefing that came over the airplane's public address system but she was unable to hear the recording clearly because she does not have good hearing. When the pilot returned to the cockpit he sat in the left cockpit seat.

The take off was “okay”; it was a “pretty good” flight. She looked out her window early during the flight and commented to her coworker how beautiful the sunset was. She did not look out her window prior to the accident. She heard one of the pilot’s say that they were getting close to landing and he reported the weather at IRK. Suddenly she heard two horrible sounds, and she noticed a light coming from the rear of the airplane that she thought was fire. She thought to herself; “I can’t believe ‘this’ is happening.” She did not remember the final impact with the ground because she was knocked unconscious.

When she awoke she was bent forward with her chest over her lap and her seat was facing rearward but she was still on the left side of the airplane. She heard a man in seat 5C groaning. She saw her coworker in seat 4C and they had a brief exchange of words but she does not remember what they said. She saw her coworker get out of his seat, but she did not see him exit the airplane. She saw fire in the front left side of the cabin and outside on the left side of the airplane. Before she exited the airplane she noticed that the interior cabin was a crumbled mess with wires and other unidentifiable objects around her. She did not see or hear any passengers moving about the cabin before she exited the airplane.

When she tried to get out of her seat, she felt tangled in something but she did not know what it was; she said “it” could have been her purse straps that she had stowed under the seat in front of hers. She thought there was an object or body lying across her legs and she pushed it off of her and rolled her body out of her seat. She went to her right to an opening in the fuselage and she rolled herself in a ball and fell out of the opening in the fuselage. When she landed on the ground she was burned by the fire, so she quickly moved away from the burning airplane. She saw her coworker lying on the ground. She did not hear any noises coming from inside the airplane.

As she moved away from the burning airplane she ran into sticker bushes. She heard popping noises and explosions coming from the burning airplane as she walked along a cornfield. Eventually she sat down in the middle of the cornfield and watched the airplane burn. Except for the popping and explosions coming from the airplane, she did not hear any other noises coming from the passengers inside the airplane.

It seemed like quite some time had passed until she heard sirens. When rescuers arrived at the accident site she walked toward them and they told her to sit down, then a fireman and a paramedic helped her get into an ambulance.

She stated that she sustained a compound fracture of her right arm, burns to her face, arms and legs, a puncture wound in her left calf, and bruises around her mid section that her doctors attributed to her seatbelt.

4.0 Airplane Damage and Wreckage Site

4.1 Description of Site

The airplane crashed through a wooded area into a hollow between two adjacent bean fields about 1.4 miles from the IRK runway 36 threshold. The main wreckage site was located at N 40° 03.844', W 92° 32.663', and the remains of the forward fuselage were oriented at about 190° magnetic, with the nose of the airplane pointing opposite that of the flight path of 360° magnetic. The main wreckage area included the airframe, right engine and propeller, left propeller, cockpit, left inboard wing, the right wing, and the forward and aft fuselage and empennage. See Attachment 2 for photographs of the accident site and the remains of the cabin furnishings. The post impact fire consumed most of the fuselage and interior cabin. The ground and vegetation about 20 feet in diameter surrounding the main wreckage was burned. Refer to the Structures Group Chairman's Factual Report for documentation of the airplane structure and wreckage distribution.

4.2 Airplane Damage

4.2.1 Exterior Damage

The windshield structure had separated from the fuselage and was found adjacent to the nose of the airplane along the edge of the burned vegetation. Both crewmember control yokes were found about 5 feet forward of the cockpit, and a headset was found suspended from a tree limb about 10 feet forward of the cockpit. A main battery was found about 15 feet forward of the main wreckage, and the left engine was found 30 feet beyond the empennage. The upper portion of the airplane's rudder had separated and two of the separated sections were found along the wreckage path about 50 feet

forward of the main wreckage. See the Structures Group Chairman's Factual Report for more detailed information about the airplane damage.

4.2.2 Interior Damage

The cockpit wreckage included the charred remains of the instrument panel and associated wire bundles. The forward cabin, from aft wing spar forward to cockpit, was in a horizontal position and resting against a burned and scorched tree. The aft fuselage, from the rear wing spar to the rear pressure bulkhead, and the empennage were rotated about 90 degrees to the left (as viewed from the rear of the airplane looking forward.) The main cabin entry door was resting beneath the consumed aft cabin furnishings and was found in the closed and latched position.

The post impact fire consumed the majority of cabin and cockpit furnishings. Only steel components and larger aluminium alloy components were identifiable in the cabin wreckage. Portions of the aft left fuselage remained unburned because the aft fuselage had pivoted left and the outer fuselage wall was resting against the damp earth.

4.2.2.1 Cockpit

The flight deck seat configuration consisted of two seats located in the cockpit. The seats were a left hand and right hand configuration with the fore/aft seat adjustment lever on the right hand side of the pilot's seat and left hand side of the co-pilot's seat. The seats were equipped with a 4-point seat belt restraint system.

The information for the seats and seatbelts installed in the cockpit was obtained from the airplane's maintenance records:

Captain's Seat

Manufactured by LTD
Oxfordshire, England
Part Number 13710746L411
Model Number 135-01-001A
TSO C39-Type 1

Co-Pilot's Seat

Manufactured by LTD
Oxfordshire, England
Part Number 13710746R411
Model Number 136-01-001A
TSO C39-Type 1

Seatbelts

Manufactured by Pacific Scientific
Pasadena, California
Captain's - Part Number FA0108072-01
Co-Pilot's - Part Number FA1111428-02

Three crew shoulder harness webbing adjusters and one rotary seatbelt buckle were found in the charred remains of the cockpit wreckage. The seatbelt buckle had only the fixed lap belt fitting attached to the four-point buckle. The lower part of a crewmember seat frame was found in the cockpit wreckage with the plunger in the engaged position and fore/aft seat adjustment in the full aft position. The location of the adjustment lever on the left side of the seat frame revealed that it was the Captain's seat. The remains of the seat frame's square tubing showed overload fractures of the steel tubing.

4.2.2.2 Cabin

The passenger seat pans and seatbacks were made of composite material, mounted on a base of metal construction. The seats did not recline and all the seats, except those in the exit row, had a break-over capability.² Each seat was attached to the cabin interior at four positions. Two fittings (one fore and one aft) attach to one of the two floor-mounted seat tracks. The other two fittings (one fore and one aft) attach to the seat track into the cabin sidewall.

Several seatbelt and seat frame components were found in the wreckage. A 19-inch section of a seat track from the cabin sidewall was found at the accident site. Its track lips were intact, and there were scrapes and an indentation at the base of the seat track. A 9-inch section of deformed and partially melted seat track was found near the charred

² The pivoting forward of the seatback allows for cleaning and access behind the seat.

wreckage. A single forward seat attachment with the anti-rattle nut and a portion of the plate separating the forward and aft seat attachments was found locked into a section of seat track. The steel screw thread protruding above the nut had aluminum alloy melted on top of the screw head. An aft seat track fitting and seat structure containing the remains of a composite seat pan were found in the wreckage. The short seat leg attached to the sidewall seat track, and a rear fitting engaged in a segment of bent seat track were also found in the wreckage.

Six aft cabin seat legs were found in the wreckage. Four of the legs were single seat inboard vertical legs (designed with “S” curved seat legs) and 2 of the legs were double seat legs (designed with a straight inboard vertical leg.) Six seat back pivot fittings from the center of the double seats were found in the wreckage. A bolt in a slot restricts the seat back range of motion, and the position of the bolt indicates the relative position of the seatback. Four fittings were found with bolt in upper portion of slot (seatback in the upright position) and two of the fittings had loose or missing bolts so the position of the bolt in the slot could not be determined.

Twenty-three (23) seat back single pivot fittings for the positioning of the double and single seat backs were found in the wreckage. Eleven (11) of the fittings had the bolt in upper portion of slot (seatback in the upright position), 4 fittings had the bolt in the lower position (seat backs in the maximum forward break-over position), and six (6) of the fittings had the bolt in a middle position. Two of the pivot fittings bolt locations in the slots could not be determined because molten aluminum covered the slotted area.

The male end of the seatbelt buckles were made of steel and the female (latching part of the buckles) were made from aluminum. Four male end seatbelt buckles, 2 female end seatbelt buckles and 5 latched (both male and female ends) seatbelt buckles were found in the wreckage. The passenger seat manufacturer and design information was obtained from the airplane’s maintenance records. In addition, the seatbelt anchors were manufactured from steel. Seven burned and scorched seat belt anchors were found in the cabin wreckage.

The information for the passenger seats and seatbelts installed in the cabin was obtained from the airplane’s maintenance records:

Single Seats (installed on the left side of the cabin)
Manufactured by PTC Aerospace (a Pullman Company)
Bantam, Connecticut
Part Number 912-19V-1L
Model Number 93812-25
FAA TSO C39A-FWD Type 1

Seat Belts – Single Seats
Manufactured by Am Safe, Inc.
Phoenix, Arizona
Part Number 501010-H-2291
Model Number 449470-1
FAA TSO C22F

Double Seats (installed on the right side of the cabin)

Manufactured by PTC Aerospace (a Pullman Company)
Bantam, Connecticut
Part Number 912-19ZL-2R and 912-19ZM-2R
Model Number 93813-40 and 93813-42
FAA TSO C39A-FWD Type 1

Seat Belts – Double Seats
Manufactured by Am Safe, Inc.
Phoenix, Arizona
Part Number 501010-121-2291
Model Number 449470-1
FAA TSO C22F

4.2.2.2.1 Luggage

The airplane had a baggage compartment in the aft fuselage and a baggage pod underneath the center of the fuselage. The baggage pod and the interior baggage door were consumed by fire. Steel luggage frames and telescoping steel baggage handles were recovered from areas of the wreckage consistent with both baggage locations. Only scraps of material were recovered that resembled luggage material, and two intact steel aerosol cans were found among the remains of the baggage compartment.

4.2.2.3 Emergency Systems/Equipment

The main entry door was equipped with an integral air-stair. The remains of the main entry door consisted of the doorframe and the steel locking mechanisms. The door's locking pins (draw-bolts) were found in the engaged and locked position and the door hinges (at the bottom edge of the door frame) were intact.

The airplane's over-wing emergency exit hatches are hinged at the bottom and open inward and downward and then disengage from the hinges, enabling the hatch to be removed from the exit. An exit hatch's steel hinge was found near the main spar on the left side of the wreckage debris. No other parts of the emergency exit hatches were found.

A green portable oxygen bottle was found outside of the main wreckage near the right side of the forward cabin. The portable oxygen bottle's gage was found in the red position.

5.0 Evacuation

See section 3.1 Passenger Interviews of this report for information about the survivor's evacuation from the airplane.

6.0 Medical and Pathological

6.1 Injury Table

<u>Injuries</u>	<u>Flight Crew</u>	<u>Flight Attendants</u>	<u>Passengers</u>	<u>Other</u>	<u>Total</u>
<u>Fatal</u>	2	0	11	0	13
<u>Serious</u>	0	0	2	0	2
<u>Minor</u>	0	0	0	0	0
<u>None</u>	0	0	0	0	0
<u>Total</u>	2	0	13	0	15

6.2 Survivor Injuries

Two passengers survived the accident and were transported by ambulance to Northeast Regional Medical Center with serious injuries. The Northeast Regional Medical Center provided summaries of the survivor's injuries. See Attachment 3 for summaries of the survivor injuries.

6.3 Fatal Injuries/Toxicology

Thirteen passengers and two crewmembers sustained fatal injuries. The Adair County Medical Examiner conducted autopsies of the fatally injured occupants and provided cause of death, injury and toxicology information to the Safety Board. The cause of death for all occupants was multiple blunt force trauma. See Attachment 3 for summaries of the injuries and toxicology information for the fatally injured occupants on board flight 5966.

7.0 Aircraft Rescue and Firefighting

7.1 Notification

IRK is an uncontrolled limited certificated airport that operates on a Unicom frequency of 122.8, and in accordance with 14 CFR Part 139.209 "*Limited Airport Operating Certificate: Airport Certification Specifications*" must be manned by an ARFF truck during the scheduled departure and arrival time (including 15 minutes before and after) of an aircraft designed to carry more than 9 passenger seats and less than 31 passenger seats. When Corporate Airlines flight 5966 crashed, a local farmer whose neighbor witnessed the accident, called the IRK Airport Operator and reported the accident.

The Survival Factors Group interviewed the Kirksville Airport Operator, and the Airport Supervisor on October 23, 2004.

Airport Operator, Hall
Employed from 1984 to the present time

His duties include crash fire rescue, line service³, and general airport services

He identified his title as the “Airport Operator” at IRK. He stated that he was working line service and was expecting the 7:30 p.m. arrival of flight 5966. He was listening to channel 132.6, Kansas City Center (Center), and he heard the center clear flight 5966 for approach at IRK. He walked outside to see if he could see flight 5966 breaking out of the clouds, but the flight did not show up. He walked back inside and changed his radio to channel 122.8 (Unicom) and did not hear the pilot from flight 5966 make an announcement. He changed the radio back to Center to find out where the flight was at, but he did not hear anything, and shortly afterward he heard Center trying to make radio contact with flight 5966.

He walked outside and saw the station agent for Corporate Airlines who was waiting for the flight to arrive, and the station agent asked him “where is the airplane”. The station agent told him that the pilot of flight 5966 had called Corporate Airlines on the company frequency to report that they were within range of IRK. Ten minutes later the Airport Operator received a call from a local farmer who was informed by his neighbor that an airplane had crashed 3 or 4 miles from the airport. The farmer said that he did not hear or see the crash, but his Amish neighbor told him about the accident and asked him to call the airport to report the accident.

After receiving the call from the farmer he called the Kirksville City Hall Dispatch (Kirksville 911) and relayed the report of the accident, and the approximate location of the crash. He got out the IRK emergency procedures manual and called the Airport Supervisor and informed him about the accident. Later, he received a call from the Columbia flight service station with a pilot report that the IRK VASI was not working. He went out and checked the VASI and could not find any problems with it.

He said that the Airport Supervisor, two part time (weekend only) Airport Operators, and himself are trained for ARFF duties. The IRK ARFF equipment was a 1996 E-1 on International truck chassis, that holds 500 gallons water, 37 Gallons AFFF (6%), and 400 pounds of dry chemical (Purple K.)

³ Line service includes: The fueling, cleaning, towing, de-icing and customer service of general aviation airplanes.

Airport Supervisor Sayre
Employed by at IRK for 25 years

He was at home and received a call from the Airport Operator, who told him that a “Corp Ex” (Corporate Airlines) airplane went down. When he stepped out of his house he heard sirens and he saw emergency vehicles as he drove to the airport at about 8:05 pm. He arrived at the airport at about 8:20 p.m. and called the airport manager. He went outside and noticed that the IRK airport MALS (lights) were on. He normally checks the runway lights at least once a day, sometimes twice. The lights had been checked earlier that day.

He said that two other airplanes landed that evening at approximately 5:00 p.m. and another airplane landed about 1 hour before the accident occurred. He remembered that one of the earlier arrivals was a Cessna 182 that landed on an instrument approach with a 400 foot ceiling, and 4 miles visibility.

Safety Board staff received an audiotape and timeline from the Kirksville 911 regarding the notification of the accident. See Attachment 4 for a copy of the Kirksville 911 audiotape transcript and timeline.

7.2 Rescue and Fire Fighting Response

On October 24, 2004, the Survival Factors Group interviewed members of the Adair County La Plata Volunteer Fire Department (LPFD) that responded to the accident.

Battalion Chief East, and Incident Commander (IC)
12 years at LPFD

He received a page on his beeper at 8:00 p.m. to “standby” for the search for a possible lost airplane. At 8:03 p.m. he was notified by Kirksville 911 that the “standby” was changed to an actual emergency search for the downed airplane somewhere between Flint Trail and Oklahoma Trail south of IRK. He was enroute to the accident site at 8:06 p.m. He drove west on Flint Trail, and north towards Oklahoma Trail and saw the glow of a fire in the distance. He continued across Glenview and west along Flint Trail to a point on the dirt road that was close to the source

of the fire. He and his colleagues got out of their vehicles and walked across the bean field, to the edge of the wooded 'draw' (space of vegetation between fields.) He saw the airplane's engine and realized that the airplane was larger than the light single-engine airplane he had expected. He called the Kirksville 911 and confirmed that there was an airplane down and that he was establishing the command post at the accident site.

He split his team into pairs and they walked through the accident site loudly identifying themselves as LPFD. A female survivor called out, and he asked her how many occupants were on her flight and she answered "15 to 17". He asked her to sit down and assigned two LPFD fire fighters to attend to her injuries.

He and the other LPFD loudly identified themselves again and found another, male, survivor in a briar patch. He asked the male survivor, how many passengers were on board the flight and the male survivor answered "15". The IC asked whether anyone else had gotten out of the burning airplane and the male survivor said he thought someone had gotten out behind him but was not sure whom the other survivor was.

He assigned two firemen to attend to the male survivor's injuries and to make him comfortable. About that same time he noticed two highway patrol officers at the accident site, and a local photographer, who was taking pictures of the burning wreckage. He asked the photographer to leave the accident site and had an Adair deputy sheriff escort the photographer out of the site. He organized a search for other survivors to the south, along the fence line that bordered the bean field, but they did not find any other survivors.

The wreckage was next to a large tree and it was still on fire. There was no roof on the fuselage and he could only identify what he thought was a small piece of the airplane's nose that was pointed towards the airport (this was later determined to be the tail of the airplane.)

Emergency Medical Service (EMS) from Adair County Ambulance arrived at the site and parked their ambulance on the dirt road. Because the ground was so soft he decided not to bring any vehicles close to the accident site because he was concerned that the vehicle might get stuck in the soft dirt. LPFD used a 'Gator' ATV to transport the male survivor to the

ambulance. Five the eight LPFD firemen who responded to the accident, were medical qualified as 'First Responder' EMS.

He heard someone mention that there could be more survivors, so the Adair County Sheriff and LPFD conducted a second search using thermal imaging equipment throughout the woods surrounding the accident site, but no other survivors were found.

The IC referred to the accident site as "total chaos." He said there were a large number of people, particularly law enforcement officers from many agencies that responded to the accident. The traffic along Flint Road was backed up to the intersection at Glenview, with a large number of law enforcement vehicles from as far away as Quincy, Illinois. He thought that at one point there were about 300 people at the accident site.

As the fire died down LPFD used misted water on the airplane whenever the fire flare up. There was a small fire on the ground about 100 feet south of the main wreckage that LPFD put out with water. His firemen told him that the main wreckage flared up again at about 6:30 a.m. the next morning and they put it out with water. The IC left the scene at about 1:00 a.m. leaving three LPFD firemen with a pumper truck from neighbouring volunteer Eastern Fire Department.⁴

The IC believed that, as the Chief of a small volunteer fire department, he should position himself at the accident site "doing the same thing my firemen are doing." He was surprised there were so many people at the site. He had trouble communicating with the other agencies that arrived at the site. He thought there was a communication gap between the law enforcement agencies and the LPFD. He intended to hold a debrief of the accident response between LPFD and the other agencies. He thought it would have been useful to know the size of the aircraft when 911 called LPFD to respond to the accident. It would have been helpful to know the size because it would have been possible to get more LPFD people en-route earlier.

The LPFD is staffed by 24 volunteer firemen. The LPFD fire vehicles that responded to the accident included a pick-up truck that carries spare

⁴ The LPFD used the Eastern Fire Department's pumper truck at the site because the accident site was muddy, and unlike the LPFD's Tower pumper truck, Eastern Fire Department's pumper truck had four-wheel drive.

equipment and a small (approx 25 gallon) tank, and a Towers pumper truck, that carries 750 gallons of water, 15 gallons AFFF (3% concentration), 20 pounds of dry chemical extinguisher and a 20 pound CO₂ extinguisher. In addition one Eastern fire department pumper truck responded to the accident site. The Eastern truck was a 1984 GMC Pumper truck that carries 500 gallons of water, and a 35-pound dry chemical extinguishers and a 30-pound CO₂ extinguisher.

He said that this was the first airplane accident in La Plata County in a very long time. About 10 years ago there was an accident response exercise with a small airplane that was arranged by the LEPC (Local Emergency Planning Committee.) He said that law enforcement agencies have not generally attended LPFD's Incident Command system training. See Attachment 5 for the IC's statement regarding LPFD's response to the accident.

LPFD Fire Chief Thomas
34 years at LPFD

He received the call about the accident and he went to the station. On the way to LPFD he stopped to put gas in his truck. The 911 operator informed LPFD that it was a "possible" airplane accident and so he drove up Oklahoma Trail. When he was almost to the end of the road he received a call from a LPFD fire fighter that they had located the wreckage near Flint Trail. He turned his car around and drove to Flint Trail about the same time that the Adair County Ambulance arrived at the site. The ambulance driver parked at the top of the hill, and he asked several emergency responders to move their vehicles so that the driver of the ambulance could park in a good position to load the survivors.

He drove his truck closer to the accident site and he and other LPFD fireman loaded the female survivor on to the back of his pickup truck. Fireman Sawyer drove his truck while he and two emergency medical technicians (EMT's) and two paramedics sat with the female survivor in the back of his pickup and slowly drove her out to the road and loaded her into the ambulance. The IC had assigned him to ferry the survivors out of the accident site and ensure their safe transportation to the ambulance. The female survivor was conscious but in a lot of pain.

Later in the evening he ferried rescue people in and out of the accident site. He said that although the IC thought that the accident site was mass chaos, he believed it was more of a deterioration of the scene because more and more ineffective people were showing up at the site. He thought at one point there were as many as 300 people at the accident site. He said that he was informed that the law enforcement people that were notified by Macon 911 sent out mass notifications to all law enforcement officers as far away as Quincy, Illinois.⁵ He also said that because there was so many non-essential law enforcement vehicles parked on Flint Road the Sheriff who was tending access to the road would not let LPFD fire rescue into the site.

Firefighter LPFD Sawyer
Employed: 6 months

He was at the station at the first alarm. He began getting his equipment together when the second alarm sounded. About the time of the second alarm several other LPFD firefighters arrived and they took the white pickup #706.

They spotted a glow above the tree line when they reached Glenview and Flint Trail. At first he thought it was the glow from a house light but then saw the light flickering. He radioed the Fire Chief that they were going to investigate, and as he got closer to the flickering light he confirmed that it was a fire and radioed the Fire Chief. He then radioed Macon 911 and Kirksville 911 and informed them of the accident location. He stated that they had arrived on scene at about 8:25 p.m.

When the rest of the LPFD arrived⁶, they began walking toward the fire. They identified themselves as being from the fire department by yelling “Fire Department” twice. They heard a female voice say “hello”, and he yelled back for her to “stay there” and she yelled again saying: “help”. They walked around the burning airplane and found her and asked her how many other passengers were onboard the flight. She responded between 15 and 17, and he and another fireman stayed with her. They asked her first and last names and she gave it to them, and he evaluated her physical condition and determined that she had a broken arm that was bleeding.

⁵ Quincy, Illinois is approximately 66 miles from IRK.

⁶ Thirteen of the 24 volunteer firemen at LPFD responded to the accident.

They wrapped her arm with a compression bandage to stop the bleeding. She told him that her head hurt and he asked on a scale of 1-10 how intense was the pain, and she replied a 6 for her head and a 10 for her arm. She was very “shook up.” He examined her further to determine if she had any additional broken bones and besides her broken right arm he did not find any other broken bones. A short while later two Adair county paramedics arrived and one stayed with the female survivor.

The Fire Chief’s pickup truck arrived and they prepared her for transportation to the ambulance that was parked on the dirt road about 1,000 feet from the accident site. LPFD firemen and the paramedics placed her in the back of the truck and the paramedic and several LPFD firemen road with her in the back of the truck while the driver drove the truck at a walking pace to the ambulance. As the truck reached the top of the hill, several vehicles were in the way but moved out of the way quickly. Once the truck reached the ambulance, he got out and he walked down the road to 4 Kirksville police cars that were parked in the road blocking the ambulance’s exit route. When he reached the police cars he found that the cars were locked. He found a police officer and asked him to move the cars. The officer asked him “why?” and he said: “to get the ambulance out,” again the officer asked him “why?” and he said: “because there are survivors in the ambulance.” The police officer finally said “okay” and moved the police cars.

He continued down the road and he helped move about 25 to 30 emergency responder’s cars to allow the ambulance to exit the area. The cars were unlocked and the keys were in the cars so it was easy to move them. The only locked cars belonged to the police officers.

When the ambulance left he walked back to the site and entered from the west side. The Eastern FD pumper truck was there putting water on the fire. He stayed until the Eastern FD pumper truck ran out of water and needed fuel. The fire was under control at that time. He accompanied the Eastern FD fire truck to La Plata and filled it with water and fuel. When they returned to the accident scene with the Eastern FD pumper truck, a sheriff’s deputy denied them access to the site. When they asked why, the deputy informed them that all fire personnel had been removed from the scene. They ignored the sheriff’s deputy’s order and drove past him and back down to the accident site where they extinguished a minor fire.

He stayed at the site all night long. The fire flared up again at about 6:30 a.m. and they extinguished it with water from the pumper truck.

LPFD Fire Fighter East
26 years at LPFD

He arrived at the accident site and found the female survivor in the bean field adjacent to the airplane. He asked her if she heard or saw any other survivors other than the male survivor and she said “no” and informed him that she thought there were between 15 and 17 passengers and crewmembers on board the flight. There were already fire fighters attending to the female passenger so he went over to the male survivor and attended to his injuries.

At the IC’s request, he went over to the Eastern FD Pumper truck to help extinguish the fire. He used a ¾ inch hand line and he sprayed the wreckage with a heavy fog so it did not disturb anything inside the wreckage that might be important to investigators. He said that the heavy fog cooled off the burning wreckage and help to extinguish the fire.

LPFD Fire Fighter Carmack
15 years at LPFD

He arrived at the accident site with the IC and other LPFD Firemen and he assisted the injured survivors and helped put out the fire. When the FAA arrived at the site at about 2:30 a.m. he gave them flashlights so that they could remove the cockpit voice recorder and flight data recorder from the wreckage. Later when most of the rescue and fire fighters left the accident site, he manned the Eastern FD pumper truck to make sure the fire did not flare up again.

7.3 Medical Response

Adair County Ambulance service responded to the accident. The Survival Factors Group Chairman interviewed the ambulance driver and the nurse that transported the survivors to the hospital on October 19, 2004.

Ambulance Driver and EMT and Paramedic Drennan
10 years in current position

He was at home and he heard LaPlata fire department responding to an accident on his home radio/scanner. Because he was on-call for Adair County Ambulance he drove his truck toward town. When he got to the Adair County Ambulance Station he loaded the mass casualty trailer onto the hitch on his truck and then his supervisor got in the ambulance and they both drove to the accident site.

His truck was a $\frac{3}{4}$ ton Chevy Suburban pickup truck and towed the mass casualty trailer (5 by 8 foot enclosed trailer) from Adair County Ambulance that is capable of handling 50 survivors. His supervisor was behind his truck driving the ambulance. When he drove over the hill at about 8:25 p.m. he saw between 50 and 75 vehicles parked on the right side of the road. He pulled to the right side of the road and parked his truck and the mass casualty trailer. In order for him to have parked the mass casualty trailer at the optimum place to pick up the survivors, he would have had to drive past at least 30 cars to get closer to the accident site.

He got out of his truck and saw “the mass cluster of vehicles and people” that were crowding the road and he also noticed that even more people were arriving and parking on the wrong (left) side of the road. He said that it is common practice among emergency responders to park emergency vehicles on the side of the road in the direction they are traveling.

He walked up the road towards the entrance to the accident site, and he came upon an Adair County ambulance that was sitting in the middle of the road with (two survivors in the back of it) a nurse and a paramedic attending to the two survivors. He asked the paramedic what he needed and the paramedic told him that they needed him to get them out of the site and to the hospital. The paramedic told him that they had just gotten the survivors loaded and stable.

He got into the drivers seat and got the ambulance turned around and headed out of the site. He said it was difficult getting past all the traffic that was parked on the side of the road and that the road was muddy. He had to drive very carefully to avoid hitting the parked cars along the road. The side mirror of his ambulance clipped several of the parked car’s rear view mirrors as he drove away from the accident site.

The parked cars along the road included; personal vehicles, Missouri Highway Patrol vehicles and Adair County Sheriff's department vehicles. About two hours after his initial response he returned to the accident site to retrieve his Suburban and the mass casualty trailer. When he tried to get his vehicle out of the site there was a highway patrol pickup parked on the right side of the road at the corner of Flint Trail and Glenview trail blocking the road, making it almost impossible to get out of the accident site. He had to put his truck in four-wheel drive and drive through the ditch on the side of the road to get out of the accident site.

He thought that there was a problem with law enforcement officers who respond to accidents in Adair County. There were Sheriffs and Law Enforcement from every surrounding county that responded to the accident. The law enforcement officers arrived on a scene and start barking orders and they had no idea what the medical and fire responders roles were. He thinks that there needs to be better coordination and training between the emergency response and law enforcement agencies in Adair County.

He also thought there was a problem with communications and the length of time it took for emergency response to be notified of the accident. Kirksville 911 notified Adair County Ambulance, about the accident. Because LPFD operates on the Macon county emergency frequency, and Adair County Ambulance monitors the Kirksville frequency he did not hear what was being transmitted by LPFD while he listened to the scanner in his truck on his way to the Adair County ambulance station.

Registered Nurse and Emergency Medical Technician Drennan
5 years, and EMT for 8 years,

Kirksville 911 notified her of the accident with a J-5 page (J-5 includes all Kirksville/Adair County District Ambulances.) She radioed Adair County Ambulance Dispatch and they instructed her to respond to the accident scene. When she arrived at the scene the gravel road was congested with law enforcement, fire, ambulances and personal vehicles that were parked on both sides of the road. She did not think that the vehicles parked on the road made it difficult for them to get down the road. When she arrived at the entrance to the accident site, the survivors where being transported down the gravel road to her ambulance.

She noticed that one of the survivors was transported from the accident site on a John Deer gator (6 wheel utility vehicle) and the other survivor was on a backboard in the back of a pickup truck. The driver of the ambulance pulled it to a stop on the road because it was so muddy at the accident site and the rescue personnel loaded the survivors into her ambulance. Before they could transport the survivors to the hospital, there were vehicles that needed to be moved in order for them to get their ambulance down the road. Because she did not know whose vehicles needed to be moved she focused on patient's care. Both survivors were conscious and stable and breathing on their own but in a lot of pain.

While the vehicles were being move she started IVs on the survivors and the driver turned the ambulance around. By the time they were ready to leave the site, all the vehicles that had blocked their way out the accident site were moved. She did not think they were delayed getting out of the site because she needed to set the IV's before they left the site. They transported the survivors to Northeast Regional Medical Center.

She said that a small airplane accident occurred in Skylar County, Missouri, several weeks after the Kirksville accident, and when the ambulance that she was in arrived down the gravel road leading to the accident site, there was not as much congestion of cars or people that responded to the accident site as there was with the Kirksville accident.