



National Transportation Safety Board Aviation Accident Final Report

Location:	St Louis, MO	Accident Number:	CHI03FA099
Date & Time:	04/08/2003, 1850 CDT	Registration:	N179GA
Aircraft:	Dassault Aviation DA-20C	Aircraft Damage:	Destroyed
Defining Event:		Injuries:	2 Serious
Flight Conducted Under:	Part 135: Air Taxi & Commuter - Non-scheduled		

Analysis

The twin engine turbofan powered airplane was ditched into a river after a complete loss of power from both engines. The airplane was on a second approach to land on runway 30R after having been instructed by air traffic control (ATC) to climb during the final approach segment of the first approach due to inadequate separation from another airplane. Subsequent to the first approach, the airplane was issued vectors for the second approach by ATC. Communications transcripts show that the flight crew asked ATC how far they would be vectored during the second approach, but the flight crew did not inform ATC of their low fuel state until the airplane was already on a "base turn...to join final." The airplane subsequently lost power from both engines. During interviews, both pilots stated that there were no problems with the airplane. The second-in-command (SIC) stated that the airplane "ran out of fuel" and that the fuel quantity indicators read 0 and 100 pounds when each respective engine stopped producing power. The SIC also stated that after being instructed to climb to 5,000 feet after their first approach, he questioned the pilot-in-command about landing at another airport located about 14 nautical miles west-southwest of the destination airport. The SIC said that the PIC elected to continue with the second approach to the original destination. Research indicated that the flight crew did not obtain a weather briefing prior to the accident flight. Additionally, the Terminal Aerodrome Forecast that was valid at the time the aircraft's flight plan was filed showed a forecast ceiling consisting of overcast clouds at 1,500 feet above ground level at the aircraft's arrival time at the destination. 14 CFR Part 91.169 requires that an alternate airport be listed in the flight plan when forecast ceilings are less than 2,000 feet. No alternate was listed in the flight plan for the accident flight. Additionally, 14 CFR Part 91.167 requires that aircraft operated in instrument meteorological conditions maintain fuel reserves that allow flight to the intended destination and then continued flight to the listed alternate, and an additional 45 minutes at normal cruise speed. In 1993, the FAA/industry advisory committee developed advisory material for fuel planning and management for 14 CFR Part 121 and 135 air carrier flight operations, but the material was never published.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:
The pilot in command's improper in-flight decision not to divert to an alternate destination resulting in the exhaustion of the airplane's fuel supply, and his failure to relay his low fuel state to air traffic control in a timely manner.

Findings

Occurrence #1: LOSS OF ENGINE POWER(TOTAL) - NONMECHANICAL
Phase of Operation: APPROACH

Findings

1. (C) FLUID,FUEL - EXHAUSTION
2. (C) IN-FLIGHT PLANNING/DECISION - IMPROPER - PILOT IN COMMAND
3. (C) NOT PERFORMED - PILOT IN COMMAND
4. (C) UNSAFE/HAZARDOUS CONDITION - NOT RELAYED - PILOT IN COMMAND
5. IFR PROCEDURE - NOT FOLLOWED - FLIGHTCREW

Occurrence #2: DITCHING
Phase of Operation: EMERGENCY DESCENT/LANDING

Findings

6. TERRAIN CONDITION - WATER
7. EMERGENCY PROCEDURE - PERFORMED - FLIGHTCREW

Factual Information

HISTORY OF FLIGHT

On April 8, 2003, at 1850 central daylight time (CDT), a Dassault DA-20C, Fan Jet Falcon, N179GA, operated by Grand Aire Express, Inc. as flight GAX179, was destroyed when it was ditched into the Mississippi River near St. Louis, Missouri. The airplane was approaching to land on runway 30R (9,003 feet by 150 feet), at the Lambert-St. Louis International Airport (STL), when it lost power to both engines. The 14 CFR Part 135 non-scheduled domestic cargo flight was operating on an instrument flight rules flight plan in instrument meteorological conditions at the time of the accident. The pilot and first officer received serious injuries. The airplane departed from the Del Rio International Airport, Del Rio, Texas, about 1630.

The airplane received vectors from air traffic control (ATC) for the instrument landing system (ILS) 30R approach to STL. During the first approach, the STL tower controller initially cleared the airplane to land on runway 30R. Later, the airplane was instructed to climb to 3,000 feet and to contact departure control. The airplane was then vectored for a second approach to runway 30R. While being vectored for the second approach, the flight crew asked controllers several times how far they were to be vectored away from the airport. When the airplane was on a base leg for landing, the flight crew reported that they had a "fuel limitation." They were then immediately issued vectors and cleared for the ILS 30R approach. After being switched to the tower frequency, the flight crew declared an emergency. The crew reported to the tower controller that they lost power to both engines. The airplane was subsequently ditched into the Mississippi River.

In an interview after the accident, the pilot-in-command (PIC) stated that during the first approach to land, when they were inside the outer marker of the approach, ATC instructed them to climb to 5,000 feet and "fly the heading." He stated that they were then vectored for another approach. The PIC stated that during the second approach they asked ATC how far out they were going to be taken and ATC responded 20 miles. He said that they were again cleared for the approach, intercepted, and broke out of the overcast. He stated that they went about 1 1/2 miles after that when the engines failed. He stated that during the second approach they questioned ATC several times as to how far away from the airport they were going to be taken on the approach. The PIC stated that they informed ATC of their fuel situation. He stated that they also asked ATC why they had been instructed to go-around on the first approach and that ATC did not give them an answer. The PIC stated that he had been assigned to the airplane since April 5, 2003, and that there were no problems with the airplane. In a later telephone interview, the pilot stated that the airplane had departed DRT with 6,200 pounds of fuel on board. The pilot subsequently provided a load manifest that indicated that the airplane was limited to 25,000 pounds takeoff weight due to runway and climb limitations. The manifest showed that the actual takeoff weight was 24,646 pounds.

In an interview after the accident, the second-in-command (SIC) stated that they had received vectors for the ILS 30R approach and that everything went "fine" until they were less than 7 miles from the airport. At that point, ATC instructed them to climb to 5,000 feet. He said that they were then vectored for another approach, during which time, they were sent 23 miles west of the airport, and then 17 miles east of the airport prior to being vectored back to the final approach for runway 30R. He stated that their fuel was critical and that the right engine stopped producing power about 15 miles from the airport. He said that the left engine stopped

producing power about 30 seconds after the right engine stopped producing power. When questioned as to why he thought the engines stopped producing power, he said that they "ran out of fuel." He stated that when the right engine failed the fuel quantity indicator read zero, and when the left engine failed the fuel quantity indicator read 100 pounds. When asked if there were any problems with the airplane the SIC responded "No, the airplane was good." He also stated that after being instructed to climb to 5,000 feet after their first approach, he questioned the PIC about landing at the Spirit of St. Louis airport. The SIC said that the PIC elected to continue with the second approach to STL. The Spirit of St. Louis Airport is located about 14 nautical miles west-southwest of STL.

According to personnel statements made by FAA Air Traffic Control Specialists, the accident airplane was given missed approach instructions during its first instrument approach when adequate separation from another arriving aircraft could not be maintained.

PERSONNEL INFORMATION

The PIC held an airline transport pilot (ATP) certificate issued by the Federal Aviation Administration (FAA) on April 13, 2001. The ATP certificate listed ratings for multi-engine and single-engine airplanes. Single engine operations were limited to commercial privileges. He also held a certified flight instructor certificate with single-engine airplane, multi-engine airplane, and instrument airplane ratings. His first class medical certificate issued October 21, 2002 listed no limitations.

According to the operators records, the PIC had accumulated 3,221 total flight hours including 1,270 in the same make and model airplane as the accident airplane. Operator records show that the PIC was hired on April 11, 2000, and that he had satisfactorily completed upgrade training for the DA-20 on April 13, 2001. Training records indicate that the PIC's most recent Airman Competency/Proficiency Check, as required by 14 CFR Part 135.293, was satisfactorily completed on October 24, 2002.

The SIC held an ATP certificate issued by the FAA on April 24, 2001. The ATP certificate listed ratings for multi-engine and single-engine airplanes. His first class medical certificate issued October 21, 2002 listed the limitation that the pilot wear corrective lenses.

According to the operators records, the SIC had accumulated 5,758 total flight hours including 1,532 in the same make and model airplane as the accident airplane. Operator records show that the SIC was hired on October 26, 1999, and that he had satisfactorily completed upgrade training for the DA-20 on April 24, 2001. Training records indicate that the SIC's most recent Airman Competency/Proficiency Check, as required by 14 CFR Part 135.293, was satisfactorily completed on May 8, 2002.

AIRCRAFT INFORMATION

The airplane was Dassault DA-20, Serial number 100. The airplane was a two-engine turboprop powered low-wing airplane with an aluminum primary structure. Each engine was mounted in a pod attached to the fuselage side near the rear of the airplane. The accident airplane had been configured for cargo operations. According to maintenance records, the airplane had accumulated 15,899.3 hours total time in service as of the date of the accident. The airplane was part of an Approved Aircraft Inspection Program and was last inspected on March 17, 2003 at 15,866.1 total hours.

Two General Electric CF700-2D2 engines rated at 4,500 pounds of thrust each powered the

airplane. The left engine, serial number 222J077, had accumulated 4,136.8 hours total time in service, 2,020.4 hours since overhaul, and 600.9 hours since inspection as of the date of the accident. The right engine, serial number 304-571, had accumulated 7,798.9 hours total time in service, 7,798.9 hours since overhaul, and 806.1 hours since inspection as of the date of the accident.

The airplane fuel system consisted of a wing and center wing fuel tank and a rear fuselage compartment tank per side. Fuel is transferred from the respective wing fuel tanks to the corresponding rear fuselage tank, and then to the respective engine. A crossfeed system is also provided. A magnetic ground fuel gauging system is contained in each inboard wing fuel tank for ground check of fuel quantity. Each wing and center wing tank combination has an electronic fuel gauging system consisting of 4 capacitance type sending units which are connected to a two-pointer gauge in the pilot compartment. One of the gauge pointers indicates the mass-quantity of fuel contained in the left wing/center wing fuel tank combination. Likewise, the other pointer indicates the mass-quantity of fuel contained in the right wing/center wing fuel tank combination. The rear fuselage mounted fuel tanks each contain a float type electronic fuel quantity sending unit. These sending units are connected to a two-pointer gauge to indicate the mass-quantity of fuel in the respective rear fuel tank. Right and left side low pressure transfer failure warning systems are installed to indicate the end of fuel transfer, transfer pump stoppage, or transfer pump failure. Each wing/center wing tank has a capacity of 571.3 gallons or 3,817.2 pounds of fuel, and each rear fuselage mounted tank can hold 108.5 gallons or 732.2 pounds of fuel.

METEOROLOGICAL INFORMATION

The recorded weather for STL at 1853 was: Wind- 020 degrees at 8 knots; Visibility- 2 statute miles; Weather condition- light rain and mist; Ceilings- 500 feet broken, 1200 feet overcast; Temperature- 4 degrees Celsius; Dewpoint- 4 degrees Celsius; Altimeter setting- 30.25 inches of mercury; Remarks- Surface visibility 2 1/2 statute miles, ceiling variable from 500 to 1000 feet, sea-level pressure 1024.7 millibars.

The Terminal Aerodrome Forecasts (TAF), for STL encompassing the accident time were obtained. At the time that the accident airplane's flight plan was filed, the TAF was:

Station Identifier: KSTL

Date and time of origin: April 8, 2003 at 1220 CDT

Valid period: Valid from 1300 CDT on April 8, 2003 until 1300 CDT on April 9, 2003

Forecast wind: 350 degrees at 11 knots

Forecast visibility: Greater than 6 statute miles

Forecast sky condition: Overcast clouds at 1,500 feet above ground level

The TAF listed that the forecast after 1000 CDT on April 9, 2003, the day after the accident, would be:

Forecast wind: 350 degrees at 11 knots

Forecast visibility: Greater than 6 statute miles

Forecast sky condition: Broken clouds at 3,500 feet above ground level

COMMUNICATIONS

On April 8, 2003, at 0918, a Direct User Access Terminal System (DUATS) abbreviated weather briefing request for GAX179 was received and processed by DynCorp Information Services LLC. At 1420, a flight plan was filed for GAX179 using DUATS. The listed route of flight was from Gainesville, Florida, to Del Rio, Texas.

On April 8, 2003, at 1324, an individual contacted the San Angelo Automated Flight Service Station and filed an IFR flight plan from Del Rio, Texas, to St. Louis International for GAX179. The caller requested flight level 330 and a direct route of flight. The pilot listed for the flight plan was the accident pilot. No alternate destination was listed. The caller requested no further services after the flight plan was filed. No record of a weather briefing for the flight from DRT to STL was found.

Transcripts for radio communications between STL air traffic controllers were obtained. At 1817:10, N179GA checked in on frequency with STL approach control. Between 1817:10 and 1832:24, STL approach vectored and subsequently cleared N179GA for the ILS runway 30R approach to STL before handing communication with the airplane off to STL tower controllers. At 1832:56, N179GA checked in on frequency with STL tower. Between 1832:56 and 1836:16, the airplane remained on the STL tower frequency. During this time, the STL tower controllers initially cleared N179GA to land and then subsequently instructed N179GA to climb to 3,000 feet and continue on the localizer. The airplane was subsequently handed off to STL departure control. At 1836:38, N179GA checked in on frequency with STL departure control. The transcripts contain no mention of a low fuel situation prior to 1836:38. The following excerpts are from transmissions between GAX179 and various control positions for the time period from 1836:38 to 1851:21. The abbreviations for the various entities making transmissions are as follows:

Transmitting entity	Abbreviation
N179GA	N179GA
STL Approach Control Arrival South Position	STL-AS
STL Approach Control Departure South Position	STL-DS
STL Tower Local Control North Position	STL-NL
STL Tower Local Control Local Three Position	STL-L3

1836:38 N179GA uh departure grand aire one seventy nine three thousand (unintelligible) maintaining heading

1836:43 STL-DS grand express one seventy nine saint louis departure radar contact climb and maintain five thousand

1836:49 N179GA uh maam five thousand you know what's uh what's up with uh why we are got a missed approach on that one seventy nine

1836:56 STL-DS grand express one seventy nine maintain five thousand i didn't understand your last sir

1837:01 N179GA uh we're climbing five thousand and i've a question that we were missed on that three zero right approach you know how far we're gonna go out this way

1837:09 STL-DS grand express one seventy nine turn left heading one eight zero
 1837:13 N179GA one eight zero one seventy nine
 1837:39 STL-DS grand express one seventy nine it be best to ask the tower once you get on
 the ground we don't know what happened
 1837:46 N179GA okay and how long uh before we go on landing sir
 1837:49 STL-DS about a twenty mile final
 1838:24 STL-DS grand express one seventy nine turn left heading one two zero
 1838:27 N179GA one two zero on heading one seventy nine
 1839:04 STL-DS grand express one seventy nine maintain one niner zero knots for spacing
 1839:07 N179GA one niner zero for spacing one seventy nine
 1840:06 STL-DS grand express one seventy nine traffic one oclock two miles same direction
 a boeing seven five seven descending out of six thousand six hundred for six thousand
 1840:15 N179GA one seventy nine uh we have in check
 1840:26 STL-DS grand express one seventy nine contact saint louis approach one two six
 point five five
 1840:30 N179GA twenty six fifty five
 1840:42 N179GA good afternoon grand aire one seventy nine four thousand one two zero
 heading
 1840:52 STL-AS grand aire one seventy nine saint louis roger maintain five thousand
 1840:55 N179GA maintain five thousand uh one seventy nine
 1843:16 N179GA departure grand expre grand aire one seventy nine how far are we going to
 stay on this heading sir
 1843:22 STL-AS it'll be about ten more miles sir will that be all right
 1843:25 N179GA uh we
 1843:28 N179GA sir is it possible can we turn ah a little bit earlier than ten miles one seven
 nine
 1843:33 STL-AS okay i'll turn you in sooner
 1843:35 N179GA thank you
 1844:15 STL-AS grand aire one seven nine reduce speed to one seven zero
 1844:19 N179GA one seven zero one seventy one seven nine
 1844:41 STL-AS grand aire one seven nine turn left heading zero three zero
 1844:44 N179GA zero three zero one seven nine
 1845:31 N179GA saint louis tower uh approach grand aire one seventy nine
 1845:40 STL-AS grand aire one seventy nine say again
 1845:42 N179GA yes sir how far are we gonna go on the zero two zero we might have uh

little bit uh fuel uh limitation here

1845:49 STL-AS you're on a base turn sir to join final
1845:51 N179GA okay roger that one seventy nine
1846:17 STL-AS grand aire one seventy nine i may have to take you about a half a mile
across final
1846:22 N179GA sir we have to make landing here we have uh limited fuel here
1846:27 STL-AS grand aire one seventy nine turn left a heading three three zero intercept
three zero right localizer
1846:32 N179GA three three zero intercept the localizer one eight one seventy nine
1846:50 STL-AS grand aire one seventy nine six miles from exale cross exale at three
thousand five hundred cleared i l s runway three zero right approach maintain one seven zero
knots til five mile final
1846:57 N179GA roger sir
1846:59 STL-AS grand aire one seventy nine contact the tower one two zero point zero five
1847:03 N179GA one two zero zero five thank you sir
1847:22 N179GA i just (unintelligible) to dial it
1847:34 N179GA tower grand aire one seventy nine uh final for runway three fi uh three
zero right
1848:00 N179GA tower grand aire one seventy nine uh established i l s for runway three zero
right
1848:05 STL-NL grand aire one seventy nine saint louis tower loud and clear
1848:11 N179GA (unintelligible) for runway three zero right
1848:37 STL-L3 grand aire one seventy nine hold that speed as long as practical increase
uh two zero knots if you're able caution wake turbulence following an embraer jet seven miles
ahead
1848:45 N179GA uh gr maam grand aire one seventy nine duh we we might have to go
ahead and declare an emergency here
1848:52 STL-NL grand aire one seventy nine saint louis tower roger continue state the
nature of the emergency
1848:57 N179GA uh we uh lo looks like we gonna be uh short of un we uh we have make this
approach one seventy nine
1849:05 STL-NL grand aire one seventy nine continue american seventeen ninety six turn
left and contact ground point niner
1849:17 STL-NL grand aire one seventy nine uh give me the best speed you can to the
airport you're cleared to land runway three zero right traffic on a three mile final
1849:24 N179GA oh cleared to land runway three zero right one seven nine
1849:46 STL-NL grand aire one seventy nine you need to maintain uh two thousand one

hundred feet and maintain two thousand one feet until you intercept the glideslope please low altitude alert check your altitude immediately altimeter three zero two niner

1850:00 N179GA but we lost both engine we can't we have to make landing at sata uh anywhere sir

1850:06 STL-NL grand aire one seventy nine roger

1850:34 N179GA emergency emergency we're going uh we're going bo landing goin bo landing we're going (unintelligible)

1850:40 STL-NL grand aire one seventy nine roger we have equipment responding to your situation

1851:21 STL-NL grand aire one seventy nine radar contact

No further communications were received from N179GA.

The transcripts contain no record of a transmission from N179GA indicating a low fuel state prior to the 1845:42 transmission. The full transcript of communications are included in the public docket associated with this accident investigation.

FLIGHT RECORDERS

There were no flight recorders installed in the accident airplane.

WRECKAGE AND IMPACT INFORMATION

On April 9, 2003, the airplane was recovered from the Mississippi River and placed on a barge for examination. The airplane was recovered in two parts. The aft fuselage structure, including the tail surfaces and engines, was separated at the trailing edge of the wing. The aft fuselage remained attached to the forward fuselage by cables, wiring and plumbing. The wings remained attached to the forward section of the fuselage. Prior to the recovery, the airplane was almost completely submerged. Only the wing tips and the forward section of the fuselage at the break were visible prior to recovery. The nose cone of the airplane was recovered from the shore of the river upstream of the main wreckage.

The engines were examined and all rotating components rotated freely. No visible damage to the compressor or bypass fan blades was observed on either engine. Control system continuity in the aft fuselage was verified from the tail surfaces to the fuselage break. The control system push-pull rods exhibited deformation consistent with bending. The breaks in the push-pull rods were consistent with overstress failure.

The forward section of the fuselage and wings were examined. The nose landing gear and the right main landing gear were in the up and locked position. The left main landing gear was extended and the up-lock hook was broken. The flight control system was examined and continuity was verified for the rudder and elevator controls from the cockpit to the fuselage break. Aileron control system continuity was verified from the cockpit to the pressure seal box at the leading edge of the wing. The push-pull rod end immediately ahead of the pressure seal box was broken at the bellcrank. The break was consistent with overload failure. The push-pull rods running from the pressure seal box and along the leading edge of the wing had several breaks. All of these breaks had signatures consistent with overload failure. Aileron control system continuity from the farthest outboard push-pull rod break to the control surfaces was verified.

The fuel tanks were drained and a large amount of water was drained from each wing tank. No measurable quantity of fuel was recovered during the draining process.

Subsequent to the accident, the fuel totalizers for the left and right engine fuel flow read 2,978 and 2,944 pounds respectively.

TESTS AND RESEARCH

A fuel receipt was obtained from a fuel supplier at the departure airport. The receipt showed that the airplane was fueled with 700 gallons (4,760 pounds) of Jet-A fuel on the day of the accident.

14 CFR Part 91.169 entitled "IFR flight plan: Information required" states:

(a) Information required. Unless otherwise authorized by ATC, each person filing an IFR flight plan must include in it the following information:

(1) Information required under § 91.153(a) of this part;

(2) Except as provided in paragraph (b) of this section, an alternate airport.

(b) Paragraph (a)(2) of this section does not apply if:

(1) Part 97 of this chapter prescribes a standard instrument approach procedure to, or a special instrument approach procedure has been issued by the Administrator to the operator for, the first airport of intended landing; and

(2) Appropriate weather reports or weather forecasts, or a combination of them, indicate the following:

(i) For aircraft other than helicopters. For at least 1 hour before and for 1 hour after the estimated time of arrival, the ceiling will be at least 2,000 feet above the airport elevation and the visibility will be at least 3 statute miles.

(ii) For helicopters. At the estimated time of arrival and for 1 hour after the estimated time of arrival, the ceiling will be at least 1,000 feet above the airport elevation, or at least 400 feet above the lowest applicable approach minima, whichever is higher, and the visibility will be at least 2 statute miles.

14 CFR Part 91.167 entitled "Fuel requirements for flight in IFR conditions" states:

(a) No person may operate a civil aircraft in IFR conditions unless it carries enough fuel (considering weather reports and forecasts and weather conditions) to--

(1) Complete the flight to the first airport of intended landing;

(2) Except as provided in paragraph (b) of this section, fly from that airport to the alternate airport; and

(3) Fly after that for 45 minutes at normal cruising speed or, for helicopters, fly after that for 30 minutes at normal cruising speed.

(b) Paragraph (a)(2) of this section does not apply if:

(1) Part 97 of this chapter prescribes a standard instrument approach procedure to, or a special instrument approach procedure has been issued by the Administrator to the operator for, the first airport of intended landing; and

(2) Appropriate weather reports or weather forecasts, or a combination of them, indicate the following:

(i) For aircraft other than helicopters. For at least 1 hour before and for 1 hour after the estimated time of arrival, the ceiling will be at least 2,000 feet above the airport elevation and the visibility will be at least 3 statute miles.

(ii) For helicopters. At the estimated time of arrival and for 1 hour after the estimated time of arrival, the ceiling will be at least 1,000 feet above the airport elevation, or at least 400 feet above the lowest applicable approach minima, whichever is higher, and the visibility will be at least 2 statute miles.

ADDITIONAL INFORMATION

As a result of the investigation of the January 25, 1990 crash of an Avianca Airlines Boeing 707 in New York, the Safety Board issued recommendation A-91-35 (attached) which recommended that the FAA address the incorporation of fuel planning and management procedures in transport category airplane flight manuals. The FAA responded that they did not agree with the recommendation, and the Safety Board classified the recommendation as "closed-unacceptable action." However, the FAA established an Aviation Rulemaking Advisory Committee (ARAC) Fuel Requirements Working Group (Federal Register announcement attached) tasked with determining fuel supply requirements for international and overseas operations, developing regulatory language for the revision of 14 CFR Parts 121 and 135, and developing advisory material. In October 1993, the ARAC working group produced a draft Advisory Circular (AC) 120-xx in October 1993 (cover page attached) on fuel planning that was never published.

The FAA and Dassault Falcon Jet were parties to the investigation.

Pilot Information

Certificate:	Airline Transport; Commercial	Age:	34, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	Airplane Multi-engine; Airplane Single-engine; Instrument Airplane	Toxicology Performed:	No
Medical Certification:	Class 1 Valid Medical--no waivers/lim.	Last Medical Exam:	10/21/2002
Occupational Pilot:		Last Flight Review or Equivalent:	10/24/2002
Flight Time:	3221 hours (Total, all aircraft), 1270 hours (Total, this make and model), 2900 hours (Pilot In Command, all aircraft), 129 hours (Last 90 days, all aircraft), 39 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

Co-Pilot Information

Certificate:	Airline Transport	Age:	44, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Right
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 1 Valid Medical--w/ waivers/lim.	Last Medical Exam:	10/23/2002
Occupational Pilot:		Last Flight Review or Equivalent:	05/08/2002
Flight Time:	5758 hours (Total, all aircraft), 1532 hours (Total, this make and model), 1917 hours (Pilot In Command, all aircraft), 136 hours (Last 90 days, all aircraft), 39 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	Dassault Aviation	Registration:	N179GA
Model/Series:	DA-20C	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Transport	Serial Number:	100
Landing Gear Type:	Retractable - Tricycle	Seats:	3
Date/Type of Last Inspection:	03/17/2003, AAIP	Certified Max Gross Wt.:	28660 lbs
Time Since Last Inspection:	33 Hours	Engines:	2 Turbo Fan
Airframe Total Time:	15899 Hours	Engine Manufacturer:	General Electric
ELT:	Not installed	Engine Model/Series:	CF700-2D2
Registered Owner:	Grand Aire Express, Inc.	Rated Power:	4500 lbs
Operator:	Grand Aire Express, Inc.	Air Carrier Operating Certificate:	Air Cargo; On-demand Air Taxi (135)
Operator Does Business As:		Operator Designator Code:	GXPA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument Conditions	Condition of Light:	Day
Observation Facility, Elevation:	KSTL, 604 ft msl	Observation Time:	1837 CDT
Distance from Accident Site:	10 Nautical Miles	Direction from Accident Site:	300°
Lowest Cloud Condition:	Unknown	Temperature/Dew Point:	2° C / 1° C
Lowest Ceiling:	Broken / 500 ft agl	Visibility	7 Miles
Wind Speed/Gusts, Direction:	10 knots, 340°	Visibility (RVR):	
Altimeter Setting:	30.29 inches Hg	Visibility (RVV):	
Precipitation and Obscuration:			
Departure Point:	DEL RIO, TX (DRT)	Type of Flight Plan Filed:	IFR
Destination:	St Louis, MO (STL)	Type of Clearance:	IFR
Departure Time:	1630 CDT	Type of Airspace:	Class B

Airport Information

Airport:	LAMBERT-ST LOUIS INTL (STL)	Runway Surface Type:	Concrete
Airport Elevation:	604 ft	Runway Surface Condition:	Unknown
Runway Used:	30R	IFR Approach:	ILS
Runway Length/Width:	9003 ft / 150 ft	VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	2 Serious	Aircraft Damage:	Destroyed
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 Serious	Latitude, Longitude:	38.668056, -90.185000

Administrative Information

Investigator In Charge (IIC):	John M Brannen	Adopted Date:	01/28/2005
Additional Participating Persons:	June Tonsing; FAA-St Louis FSDO; St. Ann, MO Jim Perrey; Dassault Falcon Jet Corp.; Springfield, IL		
Publish Date:			
Investigation Docket:	NTSB accident and incident docket serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at pubinq@ntsb.gov , or at 800-877-6799. Dockets released after this date are available at http://dms.nts.gov/pubdms/ .		

The National Transportation Safety Board (NTSB), established in 1967, is an independent federal agency mandated by Congress through the Independent Safety Board Act of 1974 to investigate transportation accidents, determine the probable causes of the accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report.