Aviation Investigation Final Report

Location:	Salt Lake City, Utah	**Accident Number:**	DEN03FA099
Date & Time:	June 7, 2003, 20:12 Local	**Registration:**	N123RX
Aircraft:	Agusta A109K2	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	1 Fatal, 1 Minor, 1 None
Flight Conducted Under:	Part 91: General aviation - Positioning		

Analysis

The helicopter flight crew had just finished rescuing a lost hiker and was preparing to return to their home base. The pilot informed the flight nurse that dispatch wanted them to proceed home because the helicopter was due its 25-hour inspection. The pilot mentioned that he first needed to return to the location where they picked up the hiker so he could get an altitude reading. Before taking off, search and rescue personnel warned the pilot of paragliders in the area. The flight nurse said the pilot acknowledged them, and then took off and proceeded southbound. The flight nurse said they were climbing out when she heard a loud noise. She said it seemed to come from beneath the helicopter. She said she heard the pilot say, "Oh no" and then the helicopter began spinning clockwise out of control. The flight nurse said she was being tossed around, but was trying to get into a position for the crash. Then the helicopter impacted the ground. The flight nurse said she got out through the front of the helicopter. She said she checked the paramedic and the pilot, and then went for the radio to call for help. She said that the engines were still running and she smelled fuel. At that point she noticed the tail rotor was missing. Several witnesses on the ground heard and saw the helicopter. The witnesses recalled the helicopter took off and made a right turn to proceed south. Some of the witnesses said they heard a loud bang. Most of the witnesses described the helicopter as doing a 360-degree counter clockwise turn, then the nose of the helicopter pitched up, the tail rotor came off, and the helicopter continued to spin and descend until it impacted the hillside. An examination of the helicopter's broken tail rotor trunnion showed four separate fatigue areas originating from the inner splines. The exam also showed that the fatigue occurred due to stresses that exceeded the design spectrum. Excessive heating was noted due to friction between the trunnion and blade grip bushings. The tail rotor trunnion had a published service life of 2,700 hours. At the accident, the trunnion had 698.0 total hours.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: Fatigue of the tail rotor trunnion resulting in complete trunnion failure and subsequent tail rotor separation from the helicopter. Factors contributing to the accident were the low altitude, low airspeed, excessive tail rotor loading, and the worn tail-rotor blade grip bushings.

Findings

Occurrence #1: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION
Phase of Operation: TAKEOFF - INITIAL CLIMB

Findings
1. (C) ROTOR SYSTEM,TAIL ROTOR HUB - FATIGUE
2. (C) ROTOR SYSTEM,TAIL ROTOR HUB - FAILURE,TOTAL
3. (C) ROTOR SYSTEM,TAIL ROTOR - SEPARATION
4. (F) ROTOR SYSTEM,TAIL ROTOR - EXCEEDED
5. (F) ROTOR SYSTEM,TAIL ROTOR HUB PITCH CHANGE MECHANISM - WORN

Occurrence #2: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: TAKEOFF - INITIAL CLIMB

Findings
6. AIRCRAFT CONTROL - NOT POSSIBLE - PILOT IN COMMAND
7. (F) ALTITUDE - LOW
8. (F) AIRSPEED - LOW

Occurrence #3: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: DESCENT - UNCONTROLLED

Findings
9. TERRAIN CONDITION - MOUNTAINOUS/HILLY

Factual Information

HISTORY OF FLIGHT

On June 7, 2003, at 2012 mountain daylight time, an Agusta A109K2 helicopter, N123RX, owned by IHC Hospitals, Incorporated, and operated as IHC Life Flight was destroyed when it impacted a hillside 13.7 miles southeast of the Salt Lake International Airport (SLC), Salt Lake City, Utah. Visual meteorological conditions prevailed at the time of the accident. The positioning flight was being conducted under the provisions of Title 14 CFR Part 91. A company visual flight rules flight plan was on file. The airline transport pilot piloting the helicopter was fatally injured. A paramedic on board sustained minor injuries. A flight nurse on board reported no injuries. The local flight originated from a southeast Salt Lake City residential area at 2011, and was en route to SLC.

The flight nurse reported they had just finished rescuing a lost hiker and were preparing to return to their home base. The pilot informed her that dispatch wanted them to proceed home because the helicopter was due for a 25-hour inspection. The pilot told the flight nurse that he would drop her off at the hospital where she was picked up earlier, on his way back to SLC. The pilot mentioned that he needed to return to the location where they picked up the hiker so he could get an altitude reading. Before taking off, search and rescue personnel warned the pilot of paragliders in the area. The flight nurse said the pilot acknowledged them, and then took off and proceeded southbound. The flight nurse said they were climbing out when she heard a loud noise. She said it seemed to come from beneath the helicopter. She said she heard the pilot say, "Oh no," and then the helicopter began spinning clockwise out of control. The flight nurse said she was being tossed around, but was trying to get into a position for the crash. Then the helicopter impacted the ground. The flight nurse said she got out through the front of the helicopter. She said she checked the paramedic who was strapped in the left seat and determined he was unconscious. She then checked the pilot and determined he was fatally injured. The flight nurse said she then went for the radio to call for help. She said that the engines were still running and she smelled fuel. At this point she then noticed the tail rotor was missing.

Several witnesses on the ground heard and saw the helicopter. The witnesses recalled the helicopter took off and made a right turn to proceed south. Several witnesses said they heard a loud bang. Most of the witnesses described the helicopter as doing a 360-degree counter clockwise turn, then the nose of the helicopter pitched up, the tail rotor came off, and the helicopter continued to spin and descend until it impacted the hillside.

Radar data obtained from the Federal Aviation Administration (FAA) SLC Air Traffic Control Tower (ATCT) showed the helicopter lift off at 2011:16, make a 180 degree right turn to a heading of 179 degrees, and begin a climb from 4,800 feet mean sea level (msl). At 2011:43,

the helicopter began a left turn to a heading of 089 degrees. The helicopter's speed was recorded as 57 knots, and the helicopter's altitude was 5,000 feet msl. At 2011:57, the helicopter was tracking on a 089-degree heading and was at an altitude of 5,400 feet msl. Its speed was 60 knots. At 2012:02, ATCT radar showed the helicopter on a heading of 045 and in a descent. The helicopter's altitude was 5,200 feet msl and its speed was 58 knots. The last radar contact with the helicopter was at 2012:07. The helicopter's altitude was not recorded. Its heading was 114 degrees and its speed was 58 knots.

PERSONNEL INFORMATION

The pilot held an airline transport pilot certificate with rotorcraft-helicopter and instrument ratings. The certificate was issued on September 26, 1996.

According to the operating company, IHC Life Flight, the pilot had been employed with them for approximately 6 years. Company flight records showed the pilot had 6,381.6 total flying hours and 959.4 hours in the A109K2. The pilot had successfully completed a proficiency check flight with the company's chief pilot on June 6, 2003.

The pilot had a second class medical certificate dated July 25, 2002. The certificate listed the following in the limitations section: "Must possess lenses for near vision. Not valid for any class after July 31, 2003."

AIRCRAFT INFORMATION

The helicopter, serial number 10018, was owned and operated by IHC Hospitals, Incorporated, and doing business as IHC Life Flight. It was used for air ambulance and rescue operations. The registration certificate was issued on April 20, 1994.

The helicopter was being maintained under the manufacturer's recommended continuous maintenance program. A 2,400-hour inspection was conducted on April 3, 2003. The airframe time at the time of the inspection was 4,683.1 hours. The airframe time recorded at the accident scene was 4,833.3 hours.

WRECKAGE AND IMPACT INFORMATION

The National Transportation Safety Board on-scene investigation began on June 8, 2003, at 1125.

The accident site was located at a residential horse corral on a mountainside approximately 250 feet northeast of Wasatch Road, a north south running 2-lane paved road. The site was at geographical coordinates 40 degrees, 43.26 minutes north latitude, and 111 degrees, 43.14 minutes west longitude. The accident site was at an elevation of 5,000 feet msl.

The main wreckage was located on the east edge of the corral at the base of a continuing 60-

degree sloping hill. The main wreckage consisted of the remaining cockpit area, the cabin section, the engine deck, both engines, control rods, fuel tank, and baggage area, the transmission, main rotor mast and rotor head, the tail boom, tail rotor drive shaft, tail rotor gear box, horizontal stabilators, and vertical fin. The helicopter was resting on its left side against several fence posts at an 85-degree angle from vertical. The fuselage was oriented on a 003-degree magnetic heading.

An impact scar preceded the main wreckage. It began 75 feet northeast of the main wreckage and ran down slope along a 220-degree magnetic heading to the main wreckage. The impact scar was approximately 5 feet wide north to south, and 14 inches at its deepest point at the start of the scar. Pieces of broken Plexiglas, red paint chips, antennae pieces, honeycomb structure pieces, a fuel line, and several flight publications were located along the scar.

A second ground scar, consistent with a main rotor blade strike, was located approximately 25 feet south of the impact scar. The second ground scar ran west to east, was approximately 4 feet long, and 18 inches wide.

The helicopter's nose section was crushed aft and broken open. The cockpit area was broken free aft of the pilot seats. The cockpit floor was crushed upward. The left and right windscreens, eyebrow and chin windows, window frames, and cabin ceiling were broken aft and fragmented. The right cockpit door was broken out with portions of the doorframe crushed inward. The right side glareshield and instrument panel were crushed downward. The overhead circuit breaker panel was broken and canted to the right. The nose gear was bent forward and crushed upward.

The cabin area was intact. The right side fuselage skin at the cabin was wrinkled. The right side sliding door was closed and locked. The skin was wrinkled. The left side fuselage skin was crushed and broken inward where the helicopter struck a fence post. The left side sliding door was closed and locked. The skin was crushed inward and wrinkled. The Plexiglas window was cracked. The bottom skin of the helicopter fuselage was crushed upward and wrinkled. Both of the main landing gears were broken outward and aft. The main landing gears were together and found resting 4 feet east of the main wreckage. The top of the hoist was broken aft longitudinally at the attachment clips. The hook was located in the debris field lying southwest of the main wreckage. The transmission, control rods and engine deck were intact. The right side and aft portions of the fiberglass cowling surrounding the transmission were broken out and fragmented. The main rotor mast was intact to the rotor head.

Three of the four main rotor blades remained attached at the rotor head. All three blades were broken aft longitudinally approximately 3 to 4 feet outboard of the rotor head. The fourth rotor blade (blue blade) was broken out from the head. The inboard 8 feet of the blue blade was located 5 feet west of the main wreckage.

The aft fuselage and baggage compartment were bent and wrinkled. A 4-foot vertical crack was observed running from the bottom of the fuselage, up the left side, immediately aft of the

baggage door. The fuel tanks were intact. The smell of jet fuel was prevalent.

The tail boom remained attached to the helicopter. The tail rotor drive shaft was uncoupled at the front of the boom, just aft of the rear engine deck. Rotational scoring marks were observed in the deck, on the through-guide for the tail rotor drive shaft, and on the drive shaft itself. The tail rotor drive shaft housing showed an 18-inch long crushed in area across the top of the cover, approximately 4 feet aft of the rear engine deck. The crushed area showed left to right running scrapes and black-colored diagonally running paint transfers consistent with a main rotor blade strike. The tail rotor drive shaft was bent inward at the point beneath the crushed in area of the housing. Just forward of the vertical fin of the helicopter, running forward from left to right across the tail rotor drive shaft housing were several gashes in the upper left side of the tail boom and the top of the tail rotor drive shaft housing. Black-colored paint transfer marks consistent with the tail rotor making contact with the tail boom in this area were observed.

The left horizontal stabilator was in a 73-degree down pitch position. It was bent upward approximately 90 degrees at mid span. A 4-inch long gash was observed in the stabilator's upper skin near the inboard trailing edge. The right horizontal stabilator was also in a 73-degree down pitch position. The top skin showed right and outward-running tears near the outboard edge. The vertical fin was crushed forward and left from the trailing edge inward approximately 4 to 6 inches. The top 8 inches of the vertical fin was broken and bent left approximately 50 degrees. The tail cone, just aft of the tail rotor gearbox was broken left and off. It was found resting approximately 9 feet east of the main wreckage. The tailskid was bent left and broken upward.

The tail rotor gearbox and 90-degree drive shaft were bent forward approximately 40 degrees and upward 17 degrees. The gearbox was intact. The splines where the tail rotor trunnion mounted to the 90-degree drive shaft and the threads to the retaining nut that holds the tail rotor assembly together showed little damage. Both tail rotor pitch links were broken outward.

The tail rotor hub and blade assembly was located approximately 34 feet from the main wreckage on a 347-degree magnetic heading. One of the blades had two dents of approximately 2 to 3 inches in length along the leading edge. The outboard face of the blade near the hub showed a 4-inch tear in the skin starting near the hub mounting bolts and running outward. The top 18 inches of the blade was bent outward approximately 5 degrees. The second blade showed a 17-inch long, curved-shaped tear in the outboard blade face near the blade tip. Black and red-colored paint transfers were observed along the tear edges. Each blade was attached to its respective blade grip. The blade grips were intact with the tail rotor hub assembly. The trunnion and balance weights, shims, trunnion end caps, and cap retention nuts were missing. The inside of the hub showed heavy scoring and peening. The tail rotor lock nut and balance wheel were located 120 feet west of the main wreckage. The lock nut was heavily peened on the outside. The threads inside the nut showed no damage.

Beneath the tail boom and just aft of the tail rotor gearbox were shims from the blue main

rotor blade, a locking washer from the tail rotor 90-degree drive shaft, and a 5-inch long piece of a tail rotor pitch link.

A debris field extended west-northwest from the main wreckage across the corral for approximately 117 feet. The debris field described a 100-degree arc that began along a 315-degree magnetic heading and ran west to southwest to a 215-degree magnetic heading. The debris field contained pieces of broken clear Plexiglas, large pieces of main rotor blades, carbon-composite shards from the main rotor blades, pieces of cockpit frame, pieces of honeycombed metal, the right cockpit door and door frame, broken pieces of the transmission and right engine cowling, broken avionics components, a static inverter, relays, an oxygen bottle, and the hoist hook.

A 14-foot section of main rotor blade was located 20 feet from the main wreckage on a 178-degree magnetic heading. The rotor blade piece consisted of the bent and broken blade leading edge and blade tip.

Another large piece of main rotor blade was located 150 feet from the main wreckage on a 359-degree magnetic heading. The blade piece was bent and fragmented.

A second debris field extended down the hillside from the corral where the main wreckage was located. The debris field was approximately 25 feet wide east to west, and 40 feet long north to south. The debris field contained pieces of broken clear Plexiglas, broken cockpit frame and honeycomb structure, and pieces of main rotor blades.

Pieces of the tail rotor trunnion, including the balance weights, trunnion end caps, and cap retention nuts were located 739 feet east of the helicopter main wreckage. The trunnion was broken into two large pieces at the splines where the tail rotor 90-degree drive shaft inserts.

An examination of the engines showed no anomalies. Drive shaft continuity from the left and right engines to the mixing gears to the transmission was established. The main rotor transmission rotated freely from the mixing gears to the main rotor drive shaft. The transmission showed continuity to the tail rotor drive shaft. Tail rotor drive shaft continuity was established from the transmission through the forward and rear engine decks, across the tail boom, to the tail rotor gearbox. The 90-degree drive shaft and the tail rotor drive shaft into the tail rotor gearbox showed continuity and rotated freely.

Flight control continuity was established from the control pedals, mounted on the right cockpit side, through to the tail rotor pitch links. Control continuity was also established from the collective through the control rods to the main rotor head.

An examination of the remaining helicopter systems revealed no preimpact anomalies that could have contributed to the accident.

The helicopter's tail rotor, tail rotor gear box, pitch link, locking ring, and the two pieces of the

trunnion were retained for further examination.

MEDICAL AND PATHOLOGICAL INFORMATION

The Salt Lake County, Utah, Medical Examiner, conducted a post-mortem medical examination of the pilot at Salt Lake City, on June 9, 2003.

FAA toxicology testing of specimens from the pilot was negative for all tests conducted.

TESTS AND RESEARCH

The tail rotor parts were examined in Washington, DC, on June 18, 2003, at the National Transportation Safety Board's Materials Laboratory. The initial examination of the two trunnion pieces showed four separate fatigue planes originating from the inner splines.

Each fracture surface on the trunnion pieces had portions that were flat with curving boundaries and curving crack arrest lines, features typical of fatigue. Multiple fatigue origins and cracks were observed in the fracture surfaces of the two trunnion pieces, and at the roots of splines 9, 10, and 21. Fatigue fracture features emanated from multiple origins at the root of the contact face of spline 22. Fatigue cracks were also observed in splines 27 and 1.

During the detailed examination, trunnion piece number 1 was sectioned through the splines in a plane parallel to the outboard surface to obtain a polished cross-sectional profile of the splines. Surface roughness was examined at several spline roots. The average distance from peak to valley was approximately 4.53 microns. Dividing this value by 4 produces an estimate of the root mean square (RMS) roughness of 1.13 microns (44 microinches). According to the engineering drawing, the maximum RMS roughness is specified as 63 microinches.

Fourteen spline root radii were measured in the cross-sectional profile. The average measured radius was 151 microns (0.00595 inch). The smallest measured radius was 136 microns (0.00535 inch). These values were lower than the approximate value specified in the drawing (approximately 180 microns). However, according to the manufacturer, these values are within the range of values typically observed on trunnion assemblies, including those used for fatigue testing.

The trunnion piece was then cut perpendicular to the longitudinal axis in the bushing area, and core hardness and conductivity were measured. The average hardness was 67.1 HRB, and the conductivity was 39.6 percent IACS. According to engineering drawings, the trunnion is specified as aluminum alloy 2024-T351 with a minimum hardness of 68 HRB. According to the Aerospace Structural Metals Handbook (1995 Edition, CINDAS/USAF CRDA, Handbooks Operation, Purdue University), the typical conductivity for this alloy and temper is 29.7 percent IACS.

In the trunnion assembly, Pro-seal 890, Class B-2, is applied at the outer end. The sealant is

specified to MIL-S-8802. Sealants made to MIL-S-8802 are specified to operate up to 121 degrees Celsius (250 Degrees Fahrenheit). The cover at the outer end of the accident trunnion assembly was removed from piece number 1. The sealant was brown, cracked, and degraded, consistent with exposure to temperatures above the specified range.

The manufacturer reported that following the initial examination, they conducted tests to measure hardness and conductivity changes in alloy 2024-T351 samples with a baseline hardness of 76 HRB and a conductivity of 29 percent IACS after exposure to elevated temperatures. After 300 hours at 200 degrees Celsius (392 degrees Fahrenheit), the hardness was measured as 74 HRB, and the conductivity was 39.4 percent IACS. In another sample, after 8 hours at 250 degrees Celsius (482 degrees Fahrenheit), the hardness was 67 HRB, and the conductivity was 41 percent IACS, values similar to those observed on the accident trunnion.

The manufacturer also reported that room temperature and elevated temperature fatigue tests were performed on alloy 2024-T351 samples heat treated for 8 hours at 250 degrees Celsius. The fatigue tests were conducted using notched coupons (Kt=3) in tension (R=0.1). The results showed that at room temperature, the fatigue endurance limit did not decrease for the heat treated samples relative to the untreated samples. At 200 degrees Celsius, the fatigue endurance limit was 23 percent lower than that of the untreated sample at room temperature. At 250 degrees Celsius, the fatigue endurance limit was 41 percent lower than that of the untreated sample at room temperature. However, the manufacturer stated that a 41 percent reduction in the fatigue endurance limit is insufficient to produce fatigue within the design load spectrum.

The tail rotor hub assembly, blade grip assemblies, and the tail rotor blades were examined. As assembled on the helicopter, the hub and blade grip bushings have an interior Ampep X1 liner that is located within an exterior corrosion-resistant steel ring. The inner surface of the Ampep X1 liner is polytetrafluoroethylene (PTFE) and glass fiber composite, and the remainder of the liner is a glass fiber reinforced composite. The total thickness of the liner is 0.3 millimeters (0.008 inch).

The hub bushings on the flap axis of the hub were examined. An area of sliding contact was observed on the inboard side of the hub bushing outer ends corresponding to contact with the trunnion assembly covers. The interior surfaces of the bushings appeared black in color around approximately 270 degrees. In an approximate 90 degree area near the blade axis, the interior surfaces of the bushings appeared reddish-brown intermixed with black dimples. Within approximately 0.2 inch of the outer ends of the bushings, the surfaces had a similar reddish-brown appearance all around the circumference. On the outboard side at the inner end of the bushing, the interior liner was worn away, exposing the exterior steel ring.

A portion of the outboard side of one bushing was sectioned and examined using a scanning electron microscope (SEM). Viewed using backscattered electrons, the surface in the black region showed broken glass fibers. The fibers were analyzed using energy dispersive x-ray

spectroscopy (EDS), and the spectra showed peaks of calcium, silicon, aluminum, oxygen, and carbon, consistent with glass fibers from the exterior portion of the Ampep X1 liner.

The tail rotor blades are held to the tail rotor hub by tension-torsion straps. Motion between the blades and the hub occurs as the pitch of the blade changes. The inside diameter of the hub end of the blade grip contain two bushings, an "inner " bushing closer to the hub, and an "outer" bushing further away from the hub, that rub against the outer surface of the hub and transmit bending and torsional resistance loads. The blade B grip assembly was cut circumferentially to facilitate the examination of the outer blade grip bushing on that assembly.

The Ampep X1 liner of the inner bushing for blade B was worn through to the exterior steel ring at the hub edge of the bushing, inboard side (toward the tail boom). The liner for the outer bushing from blade B was also worn through to the exterior steel ring at the blade edge of the bushing, outboard side (away from the tail boom). Strips of white semitransparent thin film with the appearance of PTFE were observed at the steel bushings for the blade B grip assembly, particularly at the blade edge of the outer bushing. Similar film material was observed at the hub edge of the inner bushing for blade A.

National Transportation Safety Board Materials Laboratory Factual Report Number 03-108, October 28, 2003 is provided as an addendum to this report.

The tail rotor assembly was inspected at the 2,400-hour inspection on April 3, 2003. The assembly had a total time of 1,776.0 hours. The tail rotor trunnion was also inspected at that time. The trunnion had 547.8 total hours at the inspection. At the accident, the trunnion had 698.0 total hours. The published service life limit of the trunnion is 2,700 hours.

ADDITIONAL INFORMATION

Parties to the investigation were the FAA Flight Standards District Office, Salt Lake City, Utah, IHC Life Flight, Agusta Aerospace Corporation, and Turbomecca Engine Corporation.

The helicopter wreckage was returned and released to the operator's insurance company on November 5, 2003.

Pilot Information

Certificate:	Airline transport	**Age:**	49,Male
Airplane Rating(s):	None	**Seat Occupied:**	Right
Other Aircraft Rating(s):	Helicopter	**Restraint Used:**	
Instrument Rating(s):	Helicopter	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	Class 2 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	July 25, 2002
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	June 6, 2003
Flight Time:	6382 hours (Total, all aircraft), 959 hours (Total, this make and model), 6382 hours (Pilot In Command, all aircraft), 31 hours (Last 90 days, all aircraft), 17 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Agusta	**Registration:**	N123RX
Model/Series:	A109K2	**Aircraft Category:**	Helicopter
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	10018
Landing Gear Type:	Tricycle	**Seats:**	3
Date/Type of Last Inspection:	May 28, 2003 Continuous airworthiness	**Certified Max Gross Wt.:**	6283 lbs
Time Since Last Inspection:	22.5 Hrs	**Engines:**	2 Turbo shaft
Airframe Total Time:	4833.3 Hrs at time of accident	**Engine Manufacturer:**	Turbomeca
ELT:	Installed, not activated	**Engine Model/Series:**	Arriel 1K1
Registered Owner:	IHC Hospitals, Incorporated DBA	**Rated Power:**	788 Lbs thrust
Operator:		**Operating Certificate(s) Held:**	None
Operator Does Business As:	IHC Life Flight	**Operator Designator Code:**	I7LA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	SLC,4227 ft msl	**Distance from Accident Site:**	14 Nautical Miles
Observation Time:	20:56 Local	**Direction from Accident Site:**	130°
Lowest Cloud Condition:	Few / 25000 ft AGL	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	3 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:		**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.95 inches Hg	**Temperature/Dew Point:**	24°C / -11°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Salt Lake City, UT	**Type of Flight Plan Filed:**	Company VFR
Destination:	Salt Lake City, UT (SLC)	**Type of Clearance:**	VFR
Departure Time:	20:11 Local	**Type of Airspace:**	Class B

Wreckage and Impact Information

Crew Injuries:	1 Fatal, 1 Minor, 1 None	**Aircraft Damage:**	Destroyed
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Fatal, 1 Minor, 1 None	**Latitude, Longitude:**	40.723888,-111.720558

Administrative Information

Investigator In Charge (IIC):	Bowling, David
Additional Participating Persons:	Bill Chaney; Federal Aviation Administration; Salt Lake City, UT Robert D Lesitsky; Federal Aviation Administration; Salt Lake City, UT Jim Gust; IHC Life Flight; Salt Lake City, UT Paolo Ferreri; Agusta Aerospace Corporation; Philadelphia, PA Archie Whitten; Turbomecca Engine Corporation; Grand Prairie, TX
Original Publish Date:	May 30, 2006
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=57154