



# National Transportation Safety Board Aviation Accident Final Report

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<b>Location:</b>	Kodiak, AK	<b>Accident Number:</b>	ANC04FA063
<b>Date &amp; Time:</b>	06/14/2004, 1137 AKD	<b>Registration:</b>	N401CK
<b>Aircraft:</b>	BEECH C-45H	<b>Aircraft Damage:</b>	Destroyed
<b>Defining Event:</b>		<b>Injuries:</b>	1 Fatal
<b>Flight Conducted Under:</b>	Part 135: Air Taxi & Commuter - Non-scheduled		

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## Analysis

The solo airline transport pilot departed on a commercial cargo flight in a twin-engine, turboprop airplane. As the flight approached the destination airport, visibility decreased below the 2 mile minimum required for the initiation of the approach. The pilot entered a holding pattern, and waited for the weather to improve. After holding for about 45 minutes, the ceiling and visibility had improved, and the flight was cleared for the ILS 25 instrument approach. After the pilot's initial contact with ATCT personnel, no further radio communications were received. When the flight did not reach the destination airport, it was reported overdue. A search in the area of an ELT signal located the accident airplane on a hilly, tree-covered island. A witness located to the north of the airport reported seeing a twin-engine turboprop airplane flying very low over the water, headed in an easterly direction, away from the airport. The witness added that the weather at the time consisted of very low clouds, fog, and rain, with zero-zero visibility. A local resident also stated that the weather conditions were often much lower over the water adjacent to the approach end of the airport than at the airport itself. The missed approach procedure for the ILS 25 approach is a climbing left turn to the south. About one minute after the accident, a special weather observation was reporting, in part: Wind, 060 degrees (true) at 11 knots; visibility, 2 statute miles in light rain and mist; clouds and sky condition, 500 feet broken, 900 feet broken, 1,500 feet overcast; temperature, 46 degrees F; dew point, 44 degrees F. According to FAA records, the company was not authorized to conduct single pilot IFR operations in the accident airplane, and that the accident pilot was the operator's chief pilot. Toxicology tests revealed cocaethylene and chlorpheniramine in the pilot's blood and urine.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's failure to follow proper IFR procedures by not adhering to the published missed approach procedures, which resulted in an in-flight collision with tree-covered terrain. Factors contributing to the accident were a low ceiling, fog, rain, and the insufficient operating standards of company management by allowing unauthorized single pilot instrument flight operations. Additional factors were the pilot's impairment from cocaine, alcohol, and over the counter cold medication, and the FAA's inadequate medical certification of the pilot and follow-up of his known substance abuse problems.

## Findings

Occurrence #1: IN FLIGHT COLLISION WITH OBJECT  
Phase of Operation: MISSED APPROACH (IFR)

### Findings

1. (F) WEATHER CONDITION - LOW CEILING
2. (F) WEATHER CONDITION - FOG
3. (F) WEATHER CONDITION - RAIN
4. (C) IFR PROCEDURE - NOT FOLLOWED - PILOT IN COMMAND
5. (F) IMPAIRMENT(DRUGS) - PILOT IN COMMAND
6. (F) INSUFF STANDARDS/REQUIREMENTS, OPERATION/OPERATOR - COMPANY/OPERATOR MGMT
7. (F) INADEQUATE CERTIFICATION/APPROVAL, AIRMAN - FAA(ORGANIZATION)

## Factual Information

### HISTORY OF FLIGHT

On June 14, 2004, about 1137 Alaska daylight time, a Beech C-45H Volpar, twin-engine turboprop airplane, N401CK, was destroyed during an in-flight collision with tree-covered terrain, about 10 miles east of Kodiak, Alaska. The airplane was being operated as an instrument flight rules (IFR) non-scheduled domestic cargo flight under Title 14, CFR Part 135, when the accident occurred. The airplane was owned by Kamichia M. Darby, and operated by Bellair, Inc., of Anchorage, Alaska. The solo airline transport pilot received fatal injuries. Instrument meteorological conditions prevailed at the flight's destination airport, and an IFR flight plan was filed. The flight originated at the Ted Stevens Anchorage International Airport, Anchorage, about 0955, and was en route to Kodiak.

According to Federal Aviation Administration (FAA) personnel assigned to the Anchorage air route traffic control center (ARTCC), at 0955 the accident airplane departed from Anchorage southwest toward Kodiak. As the flight approached Kodiak, ceilings and visibility around the airport continued to deteriorate below the 2 mile visibility limit required before the approach could be initiated. The pilot elected to hold east of the airport, and wait for more favorable weather conditions before being cleared for an ILS approach to the airport.

After holding for about 45 minutes, and after the ceilings and visibility had improved to 500 feet broken and 2 miles visibility respectively, the flight was cleared for the ILS 25 instrument approach. At 1132, the pilot was instructed to contact the Kodiak air traffic control tower (ATCT). After the pilot made initial contact with Kodiak ATCT personnel, no further radio communications were received from the accident airplane. When the flight did not reach the Kodiak Airport, it was reported overdue at 1137. In addition, Kodiak ATCT personnel reported a faint emergency locator transmitter (ELT) signal was being received. Search personnel from the Coast Guard and Alaska State Troopers initiated an extensive search in the area of the ELT signal. Shortly after initiation of the search, a Coast Guard helicopter crew located the accident airplane on the southern end of Long Island, within an area of hilly, tree-covered terrain. A Coast Guard rescue swimmer was lowered to the accident site, and discovered that the pilot had been fatally injured.

During a telephone conversation with the National Transportation Safety Board (NTSB) investigator-in-charge (IIC), on June 17, a witness who resides in Kodiak, reported that about the time of the accident, she saw a light-colored, twin-engine turboprop airplane flying very low over the water, headed in an easterly direction, away from the Kodiak Airport. The witness added that weather conditions at the time consisted of low clouds, fog, and rain. In her written statement to the NTSB, she wrote, in part: "The fog visibility was 0.0. [zero-zero] at most times that morning."

### DAMAGE TO AIRCRAFT

The airplane was destroyed by impact forces.

### CREW INFORMATION

The accident pilot was the chief pilot for the company. He held an airline transport pilot certificate with airplane single-engine land, and multiengine land ratings. He also held a flight engineer rating for reciprocating engine airplanes. The most recent first-class medical

certificate was issued to the pilot on May 27, 2004, and contained the limitation that he wear corrective lenses.

No personal flight records were located for the pilot, and the aeronautical experience listed on page 3 of this report was obtained from a review of FAA airman records on file in the Airman and Medical Records Center. On the pilot's application for medical certificate, dated May 27, 2004, the pilot indicated that his total aeronautical experience consisted of 18,600 hours, of which 300 were accrued in the previous 6 months.

A review of the pilot's medical records on file with the FAA's airman branch revealed that on May 15, 1990, the pilot pled no contest to State of Alaska charges of attempted misconduct involving a controlled substance, cocaine. The pilot received a suspended imposition of sentence for one year. The conditions of the suspension were that the he have no criminal violations for a year, and serve 72 hours in jail. According to the pilot's FAA medical records, the FAA was not aware of this conviction until November 1992.

The pilot's FAA medical records also revealed that the pilot tested "positive" for cocaine use in July 1990, during a "reasonable suspicion" drug test that was initiated by the pilot's employer. A memo entered into the accident pilot's medical records by the pilot's employer's medical review officer (MRO), a third party drug and alcohol program administrator, stated in part: "[The pilot] admitted to having used cocaine." The pilot told the MRO, in part: "I have already talked to my employer about this. It was really stupid thing to do. It was one time, and I'll never do it again." The MRO noted "He was briefly questioned as to the cause of the reasonable suspicion test. He indicated that he had been stopped by the Anchorage police some months ago for being in a car with some friends who were found to be in possession of cocaine. His employer had become aware of this by Flight Standards, who are considering a certificate action, and requested the test on that basis." On August 13, 1990, FAA medical records note "Assistant Chief Counsel, AAL-7, ordered an emergency order of revocation of this airman's pilot certificate for a recent conviction involving drugs. Airman voluntarily surrendered the attached medical certificate and signed the accompanying release."

During a conversation with the NTSB IIC on June 21, 2005, the FAA's Regional Counsel, Alaska Region, reported that to the best of his recollection, after a review by FAA headquarters staff, the certificate revocation was reduced to a one year suspension, and that during an informal hearing with the pilot regarding the suspension, the pilot surrendered his medical certificate. The pilot subsequently began outpatient treatment for alcohol/cocaine abuse.

A discharge summary dated March 13, 1991, from an outpatient treatment center notes "...The client is assessed as alcohol/cocaine abusive. His secondary issues include ...denial - minimization of alcohol abuse... though the client admits to being alcohol/cocaine abusive, it is still uncertain if he has accepted and internalized this. ... The client's prognosis is fair if he complies with his Aftercare recommendations..." An April 10, 1991 neuropsychology evaluation noted, in part: "History was obtained exclusively through a clinical interview with the patient. ... has had 36 random urinalyses during the past five months and was found to be consistently clean ... When asked about his cocaine history, the patient stated that he had used it a few times during the year prior to being found "dirty" in May, 1990. ... he has never had a problem with alcohol abuse. ... states that he only used the cocaine a few times. ... Obviously, he went through a very difficult time following the death of his wife, and used cocaine to self-medicate some of his emotional pain. He is no longer at risk for using recreational drugs in this respect. He has resolved much of his grief reaction, and is not in need of any further

psychiatric care at present. Prognosis is quite good for continued prosocial adjustment during coming years. ..."

On June 14, 1991, the FAA Aeromedical Certification Division sent the pilot a letter that affirmed the pilot's eligibility for a first class medical certificate. The FAA's letter mandated that continuing eligibility for certification was contingent on random drug screening with a 24-hour notice and remaining substance-free. Failure to submit to the random drug screening, or a positive test, would be grounds for immediate invalidation/revocation. This requirement was restated in an April 29, 1992 letter of medical certification from the FAA requiring the pilot to "... remain substance free from all mood altering chemicals ..." A July 8, 1992 letter to the pilot noted that he had completed required drug screening and that "...continuing eligibility for certification is contingent upon your sustained total abstinence from the use of any illegal drugs. ..." There are no records of any drug tests in the pilot's FAA medical file except for the initial positive test in July 1990.

On August 30, 1995, an FAA aviation drug abatement program inspector entered a memo into the accident pilot's medical records file stating, in part: "...an informant who wishes to remain anonymous advised me that [the pilot] attempted to obtain drugs from a friend of his. The informant stated that a female friend (who is also a pilot) and a female companion were approached by a man claiming to be [the pilot] while they were at... an Anchorage bar... the man asked if they could get him some crack or cocaine. The female pilot asked the man how he could get away with using drugs since he was a pilot and the man stated that he [unreadable] get around the drug tests. The informant claims that the female pilot left, but claims that someone subsequently sold the man some drugs." There was no record of any FAA follow up concerning this allegation.

On March 20, 1996, a memo faxed to the regional flight surgeon, Alaska Region, from the medical review officer for the pilot's employer at the time, states, in part: "[The Pilot] called me earlier this week to seek advice as to how to approach the fact that he recently had a DUI arrest." According to the fax, the medical review officer contacted the pilot's employer, and noted that there was no observations to suggest impairment or alcohol use in any proximity to the workplace or that the pilot was using alcohol excessively while not at work. The closing remark in the fax, stated: "I now understand that [the pilot] is going to see you later this week..." There was no record in the pilot's FAA medical records noting that the pilot contacted the regional flight surgeon as indicated.

The pilot's May 1, 1996 application for first class medical certificate indicated that he had been convicted on charges of driving while intoxicated. A review of the Alaska State Court System records revealed that on October 29, 1995, the accident pilot was arrested for driving while intoxicated. He subsequently pled guilty on January 8, 1996. On May 20, 1996, the pilot completed a psychiatric evaluation. The examining physician noted in his written report, in part: "... on October 29 of last year [the pilot] was prosecuted for a driving while intoxicated offense, although at the time of the current evaluation the ultimate conclusion of that proceeding is not clear. ... alcohol consumption has approximated four to six beers per week over the 12 months leading up to his DWI arrest last fall. ... in an incident of poor judgment, he apparently blew a breathalyzer greater than 0.1 and is now in the midst of some scrutiny from the FAA and Anchorage Police Department. ... I do not believe he is need of formal psychotherapeutic interventions as he is not 'mentally ill.' On the other hand, he would benefit from complete abstinence from all alcohol, and continuation of random urinalysis and/or

breathalyzer testing ..." There is no indication in the medical file that the FAA ever received or reviewed the report of arrest or conviction, or that any additional random testing was ever performed.

On December 16, 1996, the regional flight surgeon, Alaska Region, wrote a letter to the pilot stating: "Your application for first class medical certificate dated May 1, 1996, has been forwarded to this office by the Aeromedical Certification Division in Oklahoma City for our review.... The first class medical certificate issued to you by [the doctor] is valid as issued. ...Additionally, your continued airman medical certification will remain contingent on your total abstinence from use of alcohol."

On August 26, 1997, the Alaska regional flight surgeon sent a letter to the pilot stating, in part: "...medical information reveals a history of alcohol abuse. You are ineligible for medical certification... We have determined, however, that you may be granted authorization for special issuance of the enclosed first-class airman medical certificate... This authorization expires October 31, 1997. Prior to consideration for a new authorization, you must provide letters from your employer, counselor, and AA sponsor attesting to your total abstinence and sobriety for the use of alcohol or other mood altering substances. ...Your continued airman medical certification is contingent on your complete abstinence and sobriety from the use of alcohol or other mood-altering substances." According to a representative from the regional flight surgeon's office, Alaska Region, the pilot had several meetings with the regional flight surgeon in the flight surgeon's office. The representative noted that there was no record of the pilot submitting the required documentation outlined in the August 26, 1997, letter to the pilot.

On October 15, 1997, a memo about the pilot from the regional flight surgeon's office, Alaska region, to the aeromedical certification division, reported that the pilot had since moved from his previous residence, and left no forwarding address. The memo states, in part: "Our security folks went out knocking on doors trying to find him. They did, and we have a new address for him. Not sure how long this one will last. ... He's not happy about his time limited certificate; however, he does have one now plus a requirement for a follow up."

A January 5, 1998, "Notice of Client Assessment and Recommendations" from a treatment center, indicates "The client was not found appropriate for Intermediate Care or Outpatient Treatment due to findings of no criteria needing treatment. He does not need our services at the present time ..." Except for this notice, there are no additional reports in the medical file of any evaluations of any sort for substance abuse after May 20, 1996. A May 5, 1998 memo regarding the pilot from the FAA Alaska Regional Flight Surgeon's office to the FAA Aeromedical Certification division notes "... This airman recently went to AME and got a new medical. I spoke with you last week regarding airman issuance by AME, which you stated was okay. ..." The pilot's most recent application for 1st class airman medical certificate dated September 1, 2003, indicates "yes" for "substance dependence or failed a drug test ever," for "history of ... any conviction(s) involving driving while intoxicated ..." and for "history of nontraffic conviction(s) ..." Under "explanations" is noted "previously reported."

The NTSB's medical officer provided an extraction of the accident pilot's FAA medical records. A copy of the extracted records is included in the public docket for this accident.

Prior to being hired by Bellair, Inc., the pilot received a preemployment drug test as part of the Department of Transportation's Drug Abatement Program on March 9, 2001. The results were negative.

During a telephone conversation with the NTSB IIC on December 10, 2004, a representative from Alaska Aviation Toxicology, Inc. (AAT), the company that provided third party administration of Bellair's drug abatement program, reported that after the accident pilot received his preemployment drug test on March 9, 2001, no additional drug tests were conducted. The representative added that when a computer generated random drug was requested, a notice would be sent to Bellair's president/owner, who would then contact the pilot who was required to submit to the random drug test. According to the AAT representative, the accident pilot had not been randomly selected for an additional drug test while employed by Bellair, Inc.

A review of pilot's airman certification records, on file with the FAA's airman branch, revealed that on January 7, 2004, the pilot landed a Beech C-45H Volpar, twin-engine turboprop airplane, on Taxiway Yankee at the Ted Stevens Anchorage International Airport, Anchorage. According to the FAA, no postincident drug test was conducted.

On May 6, 2004, the FAA's regional counsel sent the pilot a notice of proposed certificate action relating to landing on the taxiway, proposing to suspend the pilot's airline transport certificate for a period of 30 days. According to the FAA's regional counsel, the pilot had an informal hearing pending, regarding the proposed suspension, at the time of his death.

#### COMPANY INFORMATION

At the time of the accident, Bellair, Inc., operated two Beech C-45H Volpar airplane's. According to Bellair's president and owner, he was also the director of operations at the time of the accident, and was in the process of moving all business and operational activities from Fairbanks, Alaska, to Anchorage. According to an FAA inspector from the Anchorage Flight Standards District Office, the operator's FAA operating certificate was in the process of being transferred to the Anchorage Flight Standards District Office.

The company's FAA approved operations specifications noted that the company was not authorized to conduct single pilot IFR operations in Beech C-45H Volpar airplanes. According to an FAA inspector from the Anchorage Flight Standards District Office who conducted a postaccident interview, the president/owner stated that prior to moving his company from Fairbanks to Anchorage, he verbally notified his FAA principal operations inspector (POI) in Fairbanks regarding a proposed change, in which Bellair could operate the Beech C-45H Volpars with only one pilot during IFR operations. The president/owner reported that he received a verbal authorization from the POI to operate with one pilot in the Beech C-45H Volpar airplanes. According to the operator's POI at that time, no such conversation took place with the operator, and he noted that verbal authorizations to FAA approved operations specifications are not granted. The president was unable to provide the NTSB IIC with any documentation concerning the proposed changes, and was unable to provide a date when the change would have been effective. A representative from the FAA's Anchorage Flight Standards District Office reviewed the operator's correspondence file, and it failed to disclose any evidence of the request.

An FAA inspector from the Anchorage Flight Standards District Office stated that the operator suspended all flight operations following the accident.

#### AIRCRAFT INFORMATION

The accident airplane was a Beech C-45H Volpar twin-engine turboprop airplane, serial number 51-11503, which was manufactured in 1952. The airplane was equipped with two

Honeywell TPE331 turboprop engines. Each engine was rated to produce 665 shaft horsepower.

The airplane was equipped with two Hartzell propeller assemblies, which utilized three variable pitch propeller blades each. The accident airplane was not equipped with a propeller auto-feather system.

At the time of the accident, the airplane had accrued about 16,000 flight hours, and was configured for cargo only.

#### Maintenance Records Review

An FAA airworthiness inspector assigned to the Anchorage Flight Standards District Office conducted a postaccident aircraft maintenance records review. The inspector's review revealed that at the time of the accident, the airplane was maintained on an FAA Approved Airplane Inspection Program (AAIP). According to the FAA airworthiness inspector, the president/owner was unable to provide the FAA with current airframe maintenance inspection records.

A review of available engine maintenance records located by the president/owner, revealed the left engine was changed on May 7, 2003. At that time, the airplane had accrued 15,779.6 flight hours. The engine logbook entry notes that before being installed on the accident airplane, a "hot section inspection" was complied with. The right engine was changed on May 25, 2001. At that time, the airplane had accrued 14,883.3 flight hours.

The airplane was not equipped, nor was it required to be equipped with, a cockpit voice recorder (CVR), flight data recorder (FDR), or a ground proximity warning system.

#### METEOROLOGICAL INFORMATION

The closest official weather observation station is located at the Kodiak Airport, which is situated about 10 miles west of the accident site. At 1104, a special weather observation was reporting, in part: Wind, 060 degrees (true) at 7 knots; visibility, 1.25 statute miles in light rain and mist; clouds and sky condition, 500 feet broken, 900 feet broken, 1,400 feet overcast; temperature, 46 degrees F; dew point, 44 degrees F; altimeter, 29.96 inHg.

At 1138, about 1 minute after the accident, an updated special weather observation at the Kodiak Airport was reporting, in part: Wind, 060 degrees (true) at 11 knots; visibility, 2 statute miles in light rain and mist; clouds and sky condition, 500 feet broken, 900 feet broken, 1,500 feet overcast; temperature, 46 degrees F; dew point, 44 degrees F; altimeter, 30.00 inHg.

At 1153, an updated special weather observation at the Kodiak Airport was reporting, in part: Wind, 120 degrees (true) at 3 knots; visibility, 10 statute miles; clouds and sky condition, few clouds at 1,800, 2,600 feet overcast; temperature, 55 degrees F; dew point, 52 degrees F; altimeter, 29.97 inHg.

According to several witnesses located at the airport about the same time as the accident, all consistently characterized the weather conditions as very low visibility with drizzle, fog, and very low ceilings. One witness noted that lower conditions are commonly found at the approach end of runway 25, along the water's edge of Chiniak Bay.

#### AIDS TO NAVIGATION

Runway 25 is served by four separate instrument approaches consisting of three nonprecision

instrument approaches, and one precision approach. The precision instrument approach for runway 25 is an instrument landing system (ILS) approach, with distance measuring equipment (DME). The nonprecision instrument approaches for runway 25 consists of a nondirectional beacon (NDB), a global positioning system (GPS), and a very high frequency omnidirectional radio range (VOR) approach. The NDB and VOR stations are positioned about 2.5 miles northeast of runway 25, located on Woody Island. The VOR station identifier is ODK, and the NDB station identifier is RWO.

The location of the accident was 6.5 miles east of the threshold of runway 25, and about one-half of a mile to the north of the runway 25 localizer. The ILS approach to runway 25 has a published altitude of 1,600 feet msl from the 10 DME arc off the Kodiak VOR, to JOSRA (intersection). Crossing JOSRA inbound on the 252 degree radial, aircraft may descend to the minimum descent altitude (MDA) of 542 feet msl (515 feet agl) until the runway environment is observed, or until reaching the missed approach point, at 3.5 miles DME from the runway. The minimum visibility required for the approach is 2 statute miles.

The published missed approach procedure for ILS runway 25, states: "Climbing LEFT turn to 2,500' via heading 070 degrees then climbing LEFT turn to 3,700' direct ODK VOR and hold."

Following the accident, the FAA's Airways Facilities Branch reported that the Kodiak VOR, localizer, and DME equipment functioned normally.

#### COMMUNICATIONS

Review of the air to ground radio communications tapes maintained by the FAA, revealed that the pilot successively and successfully communicated with Anchorage ARTCC, and Kodiak ATCT. A transcript of the air to ground communications is included in the public docket for this accident.

Kodiak tower communications are conducted on a frequency of 119.80 mhz.

ATIS information is broadcast on a frequency of 135.50 mhz.

#### AERODROME AND GROUND FACILITIES

The Kodiak airport, elevation 73 feet msl, is equipped with three, intersecting hard-surfaced runways. Runway 25 is 7,548 feet long by 150 feet wide. The arrival end of runway 25 is positioned at the edge of Chiniak Bay. The departure end of runway 25 is positioned at the base of Barometer Mountain that rises to 2,506 feet west of the airport. The airport is surrounded by mountains, except to the east.

#### WRECKAGE AND IMPACT INFORMATION

The National Transportation Safety Board investigator-in-charge (IIC) arrived in Kodiak on June 14. On June 15, the NTSB IIC traveled by boat to the accident scene with two Alaska State Troopers, and a Federal Aviation Administration (FAA) airworthiness inspector from the Anchorage Flight Standards District Office (FSDO).

The main fuselage and associated debris path was oriented on a 060 degree heading. (All heading/bearings noted in this report are oriented toward magnetic north.)

The accident site was located on the southern end of Long Island, within an area of hilly, tree-covered terrain. Long Island is located about 10 miles to the east of the Kodiak Airport, and in line with the back course of ILS runway 25. The terrain at the accident site consisted of soft,

moss covered tundra with numerous spruce trees measuring between 80 and 100 feet tall, and approximately 12 inches in diameter. The main wreckage site was located at an altitude of about 230 feet msl.

Evidence of freshly severed treetops marked the initial impact point of the wreckage distribution path. The path, from the initial impact point to the main wreckage site, measured about 600 feet.

With the exception of small portions of the tail section, all of the airplane's major components were found at the main wreckage area. Small portions of the accident airplane's tail section were noted along the airplane wreckage path, both lying on the forest floor, and hanging in the 100 foot tall trees.

The airplane's cockpit area, instrument panel, and forward fuselage were destroyed during a collision with a stand of large trees.

The wings had extensive spanwise leading edge aft crushing and folding in the area of center wing and fuselage, between the outboard portions of each engine.

The right wing was severed just outboard of the right engine nacelle, and was located about 20 feet behind the main wreckage, within the wreckage path.

About 15 feet of the left wing remained attached to the fuselage. The remaining portion of wing was severed.

Both engine's separated from their respective firewall mounting assemblies.

The left engine was located slightly right, and downhill of the main wreckage site. The left engine sustained impact damage to the front portion of the inlet. The left engine gearbox assembly was broken free from the compressor-mounting flange. The left propeller assembly was separated from the left engine gearbox at the propeller flange. The left propeller assembly was located within the main wreckage path, about 25 feet aft of the main wreckage site. The left propeller blades remained attached to the hub and had minimal aft bending, chordwise scratching, torsional twisting, and "S" bending. The left engine propeller assembly was discovered in the fully feathered position.

The right engine was located slightly to the right of the main wreckage site. The right engine sustained substantial impact damage to the front portion of the inlet. The left engine gearbox assembly was broken free from the compressor-mounting flange. The right propeller assembly remained attached to the severed right engine gearbox. The right propeller and right engine gearbox assemblies were located within the main wreckage path, about 10 feet aft of the main wreckage site. All three of the right propeller blades remained attached to the hub and had aft bending, chordwise scratching, torsional twisting, and significant "S" bending.

Due to impact damage, flight control continuity could not be confirmed.

#### MEDICAL AND PATHOLOGICAL INFORMATION

A postmortem examination of the pilot was conducted under the authority of the Alaska State Medical Examiner, 4500 South Boniface Parkway, Anchorage, Alaska, on June 15, 2004. The cause of death for the pilot was attributed to massive blunt-force/impact/deceleration injuries due to an airplane crash.

The Federal Aviation Administration (FAA) Civil Aero Medical Institute (CAMI) conducted a

toxicological examination on August 11, 2004. The examination revealed the presence of the following agents in the pilot's blood:

Benzoyllecgonine (0.108 ug/ml, ug/g)

Cocaethylene

Chlorpheniramine

The following agents were found in the pilot's urine:

Cocaine (0.985 ug/ml,ug/g)

Benzoyllecgonine (12.169 ug/ml, ug/g)

Cocaethylene (0.985 ug/Ml, ug/g)

Chlorpheniramine (detected in urine)

Benzoyllecgonine is an inactive metabolite of cocaine, and cocaethylene is a substance that is formed only when cocaine and ethanol (alcohol) are simultaneously present.

Chlorpheniramine is a sedating antihistamine, commonly used in over-the-counter cold/allergy preparations. In therapeutic doses, the medication commonly results in drowsiness, and has a measurable effect on performance of complex cognitive and motor tasks.

#### TESTS AND RESEARCH

##### Honeywell TPE331 turbine engines

On August 2 and 3, 2004, with the NTSB IIC in attendance, both impact damaged Honeywell TPE331 turbine engines were disassembled and examined at the analytical laboratory of Honeywell in Phoenix, Arizona.

The left engine examination revealed that the combustor and diffuser sections of the compressor contained a substantial amount of pulverized and burned wood chips and spruce tree needles. According to a senior air safety investigator with Honeywell Engine Systems, this debris plugged numerous diffuser passages, cooling holes in the inner skirt of the combustor, and secondary nozzle swirlers in the dome of the combustor, and could be expected to cause the engine to flame out. The left engine gearbox assembly was disassembled and examined. Impact witness marks on various internal gearbox bearings, bearing race assemblies, and high-speed gear assemblies, were consistent with a nonoperating engine at the time of impact. The left engine's fuel control and governor could not be tested due to impact damage. There were no preimpact engine anomalies noted during the engine examination.

The right engine examination revealed that the combustor section also contained a substantial amount of pulverized and burned wood chips and spruce tree needles. The right engine gearbox assembly was disassembled and examined. Impact witness marks on various gearbox bearings, bearing race assemblies, and high-speed gear assemblies displayed rotational smearing and gouging. There was no evidence of mechanical malfunction within the right engine. Additionally, light metal spray was observed adhering to the suction side of turbine stator blades within the right engine. The right engine's fuel control and governor could not be tested due to impact damage.

##### Hartzell Propeller

With the NTSB IIC and two FAA airworthiness inspectors assigned to the Anchorage Flight

Standards District Office in attendance, the left propeller was disassembled and examined at Dominion Propeller Service in Anchorage.

The left propeller assembly was received at Dominion Propeller Service with all three propeller blades still in the "feathered" position. The propeller spinner sustained impact damage. The damaged propeller spinner was removed, exposing the underlying propeller dome, propeller hub, and each propeller blade grip. An examination of the propeller hub assembly revealed all three propeller blades remained attached to the propeller hub, with no evidence of propeller blade slippage within the blade grips. The three propeller blade grips had impact score marks which matched corresponding score marks on the propeller dome. According to a technician with Dominion Propeller Service, the score marks could only be attained during impact, and while all three propeller blades were in the feathered position.

#### NTSB Sound Spectrum Analysis

A copy of the digital audio tapes (DAT) from the accident airplane's air to ground radio communications, were provided by the FAA, and were forwarded to the NTSB vehicle recorder laboratory in Washington, DC. A Safety Board senior electronics engineer examined the pilot's last radio transmissions with the Kodiak ATCT, using a audio spectrum analyzer. He reported that he was able to distinguish two distinct propeller sound signatures as the pilot communicated with the Kodiak ATCT. The last recorded conversation with the accident pilot took place at 1933:07, just after the Kodiak ATCT specialist on duty cleared that accident pilot for the ILS approach to runway 25. The pilot responded: "Okay, call ya at the final approach fix, Charlie Kilo." No background aircraft warning tones or alarms were heard in any of the radio transmissions. The Safety Board engineer indicated that propeller A was operating within a range of 1928 and 1947 rpm, and that propeller B was operating within a range of 1901 and 1912 rpm.

A senior air safety investigator with Honeywell Engine Systems stated the rpm ranges detected during the audio spectrum analysis are within normal approach rpm ranges.

#### ADDITIONAL INFORMATION

According to several personal pilot acquaintances, the accident pilot was very familiar with the instrument approach procedure at the Kodiak Airport. During a telephone conversation with the NTSB IIC, on June 22, one acquaintance reported to the NTSB IIC that: "If anyone could get into to Kodiak, regardless of the weather, [the pilot] could."

#### WRECKAGE RELEASE

The Safety Board released the main wreckage to the owner's representatives on June 18, 2004, at the accident site, but retained both engines and left propeller. The propeller was released to the owner's representatives on July 22, 2004, and the engines were released to the owner's representatives on June 16, 2005.

## Pilot Information

<b>Certificate:</b>	Airline Transport	<b>Age:</b>	56, Male
<b>Airplane Rating(s):</b>	Multi-engine Land; Single-engine Land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	Seatbelt
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	Yes
<b>Medical Certification:</b>	Class 1 With Waivers/Limitations	<b>Last Medical Exam:</b>	05/01/2004
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	03/01/2004
<b>Flight Time:</b>	18600 hours (Total, all aircraft), 2 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Manufacturer:</b>	BEECH	<b>Registration:</b>	N401CK
<b>Model/Series:</b>	C-45H	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	No
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	51-11503
<b>Landing Gear Type:</b>	Retractable - Tricycle	<b>Seats:</b>	2
<b>Date/Type of Last Inspection:</b>		<b>Certified Max Gross Wt.:</b>	11500 lbs
<b>Time Since Last Inspection:</b>		<b>Engines:</b>	2 Turbo Prop
<b>Airframe Total Time:</b>		<b>Engine Manufacturer:</b>	Honeywell
<b>ELT:</b>	Installed, activated, aided in locating accident	<b>Engine Model/Series:</b>	TPE331
<b>Registered Owner:</b>	Kamichia M. Darby	<b>Rated Power:</b>	665 hp
<b>Operator:</b>	BELLAIR INC	<b>Air Carrier Operating Certificate:</b>	On-demand Air Taxi (135)
<b>Operator Does Business As:</b>		<b>Operator Designator Code:</b>	GSBA

## Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument Conditions	Condition of Light:	Day
Observation Facility, Elevation:	ADQ, 73 ft msl	Observation Time:	1138 ADT
Distance from Accident Site:	10 Nautical Miles	Direction from Accident Site:	270°
Lowest Cloud Condition:		Temperature/Dew Point:	8° C / 6° C
Lowest Ceiling:	Broken / 500 ft agl	Visibility	2 Miles
Wind Speed/Gusts, Direction:	11 knots, 60°	Visibility (RVR):	
Altimeter Setting:	30 inches Hg	Visibility (RVV):	
Precipitation and Obscuration:	Light - Mist		
Departure Point:	Anchorage, AK (ANC)	Type of Flight Plan Filed:	IFR
Destination:	Kodiak, AK (ADQ)	Type of Clearance:	IFR
Departure Time:	0955 ADT	Type of Airspace:	

## Airport Information

Airport:	KODIAK (ADQ)	Runway Surface Type:	
Airport Elevation:	73 ft	Runway Surface Condition:	
Runway Used:	25	IFR Approach:	ILS
Runway Length/Width:	7548 ft / 150 ft	VFR Approach/Landing:	

## Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Destroyed
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Fatal	Latitude, Longitude:	57.761667, -152.303056

## Administrative Information

Investigator In Charge (IIC):	Clinton O Johnson	Adopted Date:	09/13/2005
Additional Participating Persons:	John B Alley; Federal Aviation Administration (Airworthiness); Anchorage, AK Stephen Stewart; Federal Aviation Administration (Operations) Pete Baker; Honeywell; Phoenix, AZ		
Publish Date:	11/17/2009		
Investigation Docket:	NTSB accident and incident dockets 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 <a href="mailto:pubinq@ntsb.gov">pubinq@ntsb.gov</a> , or at 800-877-6799. Dockets released after this date are available at <a href="http://dms.nts.gov/pubdms/">http://dms.nts.gov/pubdms/</a> .		

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.