



# National Transportation Safety Board Aviation Accident Final Report

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<b>Location:</b>	HOLY CROSS, AK	<b>Accident Number:</b>	ANC93FA060
<b>Date &amp; Time:</b>	05/06/1993, 1530 AKD	<b>Registration:</b>	N70364
<b>Aircraft:</b>	CESSNA 207	<b>Aircraft Damage:</b>	Destroyed
<b>Defining Event:</b>		<b>Injuries:</b>	1 None

**Flight Conducted Under:** Part 91: General Aviation - Positioning

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## Analysis

THE PILOT REPORTED THAT WHILE IN CRUISE FLIGHT LOOKING AT BIRDS OUT THE LEFT SIDE COCKPIT WINDOW HE OBSERVED PERIPHERALLY A 'WHITE FLASH' FILL THE RIGHT SIDE OF THE FORWARD WIND SCREEN FOLLOWED IMMEDIATELY BY AN AUDIBLE 'THUMP'. THE AIRPLANE BEGAN AN UNCONTROLLABLE DESCENT AND YAW TO THE RIGHT. THE ENGINE CONTINUED TO RUN SMOOTHLY. ADVANCING THE ENGINE POWER CONTROLS HAD NO NOTICEABLE AFFECT ON HIS ABILITY TO ARREST THE DESCENT. THE NTSB INVESTIGATOR IN CHARGE VISITED THE ACCIDENT SITE. NO EVIDENCE WAS FOUND OF A BIRD STRIKE. THE ACCIDENT SITE WAS SURROUNDED BY TALL (WHITE) BIRCH TREES. THE PILOT STATED THAT HE WAS NOT SURE WHAT HE STRUCK AND THAT IT COULD HAVE BEEN A TREE.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: THE FAILURE OF THE PILOT IN COMMAND TO MAINTAIN THE PROPER ALTITUDE. THE TREES WERE A FACTOR IN THE ACCIDENT.

## Findings

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Occurrence #1: IN FLIGHT COLLISION WITH OBJECT  
Phase of Operation: CRUISE

### Findings

1. (F) OBJECT - TREE(S)
  2. (C) PROPER ALTITUDE - NOT MAINTAINED - PILOT IN COMMAND
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Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER  
Phase of Operation: DESCENT - UNCONTROLLED

## Factual Information

### HISTORY OF FLIGHT

On May 6, 1993, at approximately 1530 Alaska daylight time, a wheel equipped Cessna 207 airplane, N70364, owned and operated by Markair Express, collided with an object while in cruise flight about 9 nautical miles north of Holy Cross, Alaska. The airline transport certificated pilot, the sole occupant on board the airplane, reported that as a result of not being able to stabilize the airplane, he performed a forced landing in a wooded area. The pilot was not injured and the airplane was destroyed. At the time of the accident, the airplane was being operated as a repositioning flight under 14 CFR Part 91. The flight departed Shageluk, Alaska, at 1518 and the destination was Aniak, Alaska. The accident site is approximately 50 nautical miles north northwest of Aniak. Visual meteorological conditions prevailed and a company VFR flight plan was filed.

The pilot offered the following information during the course of several in person interviews with the NTSB investigator in charge. He departed Shageluk with the left and right wing fuel tanks approximately half full. He initially was established in cruise flight at an indicated altitude of 500 feet msl. The propeller rpm and engine manifold pressure (mp) were set for cruise (2,300 and 23.50 inches, respectively) and the indicated airspeed was 120 knots. While looking out the left side cockpit window at birds, he observed peripherally a "white flash" fill the right side of the forward wind screen followed immediately by an audible "thump". The airplane began to descend and yaw to the right. He did not recall the rate of descent or the degree to which the plane yawed, only that the yaw did not require inordinate flight control input to overcome. While in the descent, he recalled observing an indicated airspeed of 80 knots. He was not able to discern what produced the "thump", or what damage the airplane had sustained. The engine continued to run smoothly, and all indications appeared normal. No vibration was felt either from the engine or from the flight control surfaces through the yoke. In an attempt to arrest the descent, he advanced the engine rpm and manifold pressure settings to the top of the green arc, 2500 rpm and 25 inches, respectively. Although he felt the surge in power, it did not have any noticeable affect on his ability to arrest the descent so he reduced the engine and propeller controls to their cruise setting where they remained throughout the crash landing into trees. He could not rule out the possibility that he may have struck a tree.

### WITNESS INFORMATION

There were no witnesses to the accident.

### FLIGHTCREW INFORMATION

The pilot, dob 03/08/51, holds airline transport pilot certificate No. 81604850, latest issue 05/16/91, with the ratings and limitations of airplane single and multiengine land. His first class medical certificate, dated 10/01/92, contains the limitation "holder shall wear correcting lenses while exercising the privileges of his/her airman certificate". His total pilot time is 5,395 hours of which 1,470 hours were accrued in the Cessna 207 aircraft. During the previous 90 day, 30 day, and 24 hour period, he flew 139 hour, 25 hours, and 4 hours, respectively. He completed 14 CFR Part 135 ground training on 12/09/92, 4.5 hours of flight training on 12/12/92, FAR 135.293 and 135.299 competency and line checks on 12/13/92 (1.6 hours), and initial operating experience (IOE) (11.3 hours) on 12/15/93.

## PATHOLOGICAL INFORMATION

Toxicological testing on the pilot was negative for alcohol, major drugs of abuse, and prescription and over the counter medications.

## METEOROLOGICAL OBSERVATIONS

Aniak SA 2256 (1456 lcl) AWOS 7,000 scattered, visibility 10 miles, temperature 54, dew point 29, wind 080 @ 3, altimeter 29.45.

Aniak SA 2356 (1556 lcl) AWOS 6,000 scattered, 8,500 scattered, visibility 10 miles, temperature 54, dew point 28, wind 320 @ 4, altimeter 29.45.

## WRECKAGE & IMPACT INFORMATION

The NTSB investigator in charge visited the accident site. The elevation of the accident site was 61 feet. The global positioning system (GPS) coordinates of the site are 62.19.7 N x 159.49.1 W. The collision heading and descent angle were 210 degrees (magnetic) and minus 10 degrees, respectively. The accident site was in a grove of birch (white bark) trees. Several of the trees that exhibited damage from impact with the plane were estimated to be 70 plus feet in height. The right aileron was found near one of the trees, about 45 feet from the main wreckage area. All of the components which comprised the airplane were accounted for at the site. An examination of the airplane revealed no evidence of a bird strike or preimpact problems with the aerodynamic lifting surfaces, flight control surfaces, or propeller and powerplant. The propeller blades were bent rearward and exhibited curling at the tips. The left wing fuel tank contained an unknown quantity of fuel. The right wing fuel tank was ruptured. The fuel strainer bowl contained fuel and the filter was clean.

Most of the cockpit instrumentation survived the crash with no external sign of damage. The altimeter read 29.44 inches and approximately 50 feet, respectively. The manifold pressure gauge read 30 inches. The fuel selector was in the "OFF" position.

## Pilot Information

<b>Certificate:</b>	Airline Transport	<b>Age:</b>	41, 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, Shoulder harness
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	Airplane Single-engine; Instrument Airplane	<b>Toxicology Performed:</b>	Yes
<b>Medical Certification:</b>	Class 1 Valid Medical--w/ waivers/lim.	<b>Last FAA Medical Exam:</b>	10/01/1992
<b>Occupational Pilot:</b>	<b>Last Flight Review or Equivalent:</b>		
<b>Flight Time:</b>	5395 hours (Total, all aircraft), 1470 hours (Total, this make and model), 5205 hours (Pilot In Command, all aircraft), 139 hours (Last 90 days, all aircraft), 25 hours (Last 30 days, all aircraft), 4 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

Aircraft Make:	CESSNA	Registration:	N70364
Model/Series:	207 207	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	00550
Landing Gear Type:	Tricycle	Seats:	7
Date/Type of Last Inspection:	04/26/1993, AAIP	Certified Max Gross Wt.:	3800 lbs
Time Since Last Inspection:	21 Hours	Engines:	1 Reciprocating
Airframe Total Time:	7801 Hours	Engine Manufacturer:	CONTINENTAL
ELT:	Installed, activated, aided in locating accident	Engine Model/Series:	IO-520F
Registered Owner:	MARKAIR EXPRESS	Rated Power:	300 hp
Operator:	MARKAIR EXPRESS	Operating Certificate(s) Held:	Commuter Air Carrier (135)
Operator Does Business As:		Operator Designator Code:	HERA

## Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	, 0 ft msl	Distance from Accident Site:	0 Nautical Miles
Observation Time:	0000	Direction from Accident Site:	0°
Lowest Cloud Condition:	Scattered / 10000 ft agl	Visibility	30 Miles
Lowest Ceiling:	None / 0 ft agl	Visibility (RVR):	0 ft
Wind Speed/Gusts:	7 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	360°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29 inches Hg	Temperature/Dew Point:	10° C / -2° C
Precipitation and Obscuration:			
Departure Point:	SHAGELUK, AK (SHX)	Type of Flight Plan Filed:	Company VFR
Destination:	ANIAK, AK (ANI)	Type of Clearance:	None
Departure Time:	1518 ADT	Type of Airspace:	Class G

## Wreckage and Impact Information

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

## Administrative Information

**Investigator In Charge (IIC):** TIMOTHY A BORSON **Report Date:** 05/17/1994

**Additional Participating Persons:** GARY ANDERSON; ANCHORAGE, AK

**Publish Date:**

**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 [pubinq@ntsb.gov](mailto: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. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).