



National Transportation Safety Board Aviation Accident Final Report

Location:	NOME, AK	Accident Number:	ANC96LA020
Date & Time:	12/18/1995, 1316 AST	Registration:	N340K
Aircraft:	Beech G18S	Aircraft Damage:	Substantial
Defining Event:		Injuries:	1 Minor
Flight Conducted Under:	Part 135: Air Taxi & Commuter - Non-scheduled		

Analysis

The pilot was attempting to transport by-pass mail from Nome to Gambell, Alaska. The pilot stated that the takeoff run was normal until he rotated the nose of the airplane to lift off. The pilot said the airplane pitched up and he had to apply full forward control yoke pressure while he adjusted the pitch trim to nose down. The airplane rolled to the left and the pilot used the rudders to level the wings prior to impact. The information provided by the company, the FAA, and the post office, indicate that the airplane weighed 10,114 pounds at the time of the takeoff. The certificated maximum gross weight was 10,100 pounds. A weight and balance calculation, based upon information obtained from the company and the placarded limits on the airplane, showed a center of gravity of 121.9 inches. The center of gravity limits shown in the airplane manual are 113 to 120.5 inches. The wreckage examination showed that the elevator trim indicator was indicating full nose up trim.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot exceeding the weight and balance limitations of the airplane and improperly utilizing the airplane's elevator trim by selecting full nose up trim.

Findings

Occurrence #1: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: TAKEOFF - INITIAL CLIMB

Findings

1. (C) AIRCRAFT WEIGHT AND BALANCE - EXCEEDED - PILOT IN COMMAND
2. (C) ELEVATOR TRIM - IMPROPER USE OF - PILOT IN COMMAND

Occurrence #2: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: DESCENT - UNCONTROLLED

Findings

3. STALL - INADVERTENT - PILOT IN COMMAND

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

Factual Information

HISTORY OF FLIGHT

On December 18, 1995, at 1316 Alaska standard time, a retractable gear, wheel equipped Beech G18S airplane, N340K, registered to and operated by Bering Air, Inc., of Nome, Alaska, crashed after takeoff from the Nome Airport. The on demand air taxi flight, operating under 14 CFR Part 135, was departing Nome and the destination was Gambell, Alaska. Visual meteorological conditions prevailed and a visual flight rules flight plan was filed. The airline transport certificated pilot, the sole occupant, received minor injuries. The airplane received substantial damage and was involved in a postimpact fire.

WITNESSES

During a telephone conversation with Angelo Bufus, the Nome Airport Manager, he stated he was positioned about midway on the runway just outside of the runway edge marker lights. He stated he watched the airplane takeoff and the engines sounded normal as the airplane went by his location. After the airplane lifted off he saw the right wing come up. He stated he did not see anything further.

INJURIES TO PERSONS

The pilot, the sole occupant, received minor injuries.

DAMAGE TO AIRCRAFT

The airplane received substantial damage. The fuselage of the airplane was crushed upward along the entire longitudinal axis of the airplane. The right engine separated from the engine nacelle. Both wings were damaged by a postimpact fire.

PERSONNEL INFORMATION

According to the NTSB Form 6120.1/2, the pilot had a total time of 8,500 hours with 450 hours in the Beech 18 airplane. He received a biennial flight review equivalency in the form of a 14 CFR Part 135 checkride on December 13, 1995 in a Cessna 207 airplane.

WRECKAGE AND IMPACT INFORMATION

The airplane came to rest approximately 400 feet beyond the departure end of runway 27, and approximately 1,000 feet left of the runway's centerline. The terrain beyond the extended centerline consisted of a river and a road. The terrain was smooth with few obstructions. However, the terrain to the left of the runway's centerline, the location of the airplane wreckage, was characterized by small "tailing piles" varying in height upwards to 15 feet. The airplane came to rest on a bank with the nose resting upward and the airplane's right wing lower than the left wing.

FIRE

According to the pilot, there was a fire in each of the wing/engine nacelle areas after the airplane came to a stop. The pilot stated there was no in-flight fire.

TEST AND RESEARCH

According to the documentation provided by the Operator, Bering Air, the pilot had a load of by-pass mail on board. The manifest showed that the cargo weighed 2,460 pounds. The pilot

stated that he had 900 pounds of fuel on board, and the airplane records show that the empty weight of the airplane, including oil and unusable fuel, was 6,580 pounds. According to the pilot's medical certificate information, the pilot weighed 174 pounds. This information places the gross weight of the airplane at the time of takeoff at 10,114 pounds. The certificated maximum gross weight of the airplane was 10,100 pounds.

The Bering Air, Inc., weight and balance data shows that the airplane cabin is divided into six bays. The records show that the bays are numbered starting from the cockpit as 1 through 6. Bays 1, 2, and 3 each have a maximum load capacity of 950 pounds.

Bays 4 and 5 are limited to 350 pounds and bay 6 is limited to 300 pounds.

During a telephone conversation with Rudy Scott, Bering Air's Director of Maintenance, he stated that he saw the load in the airplane after the accident and most of the weight was in the first three bays. Bay number 4 had some mail bags and potato chips. He was unable to state how much weight was in each of the bays. He stated that the cargo was by-pass mail and consisted mostly of groceries. There were at least two pallets of mail. The pallets were brought up to the airplane and the load was transferred from the pallets into the airplane. The mail weight of 2,460 pounds was provided by Bering Air, Inc..

A weight and balance calculation was computed using the following information:

	weight	moment	Aircraft empty weight including oil and unusable fuel
-----	6,580 lbs	758,892	
pilot -----	174 lbs	15,500	
fuel -----	900 lbs	113,000	
bay 1, max wt -----	950 lbs	114,000	
bay 2, max wt -----	950 lbs	144,000	
bay 3, -----	350 lbs	64,000	
bay 4, -----	110 lbs	24,000	
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	total -----	10,114 lbs	1,233,392

Calculated center of gravity = 121.9 inches.

According to the airplane weight and balance manual, the normal center of gravity limits at a gross weight of 10,100 pounds ranges from 113 inches to 120.5 inches.

The pilot stated that he completed a weight and balance calculation prior to departure. He stated that the calculation sheet was on the airplane. The airplane wing/engine nacelle areas were damaged by postimpact fire, however, the interior of the airplane was not damaged. The weight and balance calculation sheet was not located.

ADDITIONAL INFORMATION

The elevator arm assembly was found broken in the wreckage. The fracture surfaces were visually inspected and no striation marks were visible. The outside of the elevator arm assembly was covered with soot and the bottom of the arm was gouged. The elevator arm shaft was bent in the areas of the fractures.

Pilot Information

Certificate:	Airline Transport	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:	No
Instructor Rating(s):	Airplane Single-engine	Toxicology Performed:	No
Medical Certification:	Class 1 Valid Medical--no waivers/lim.	Last FAA Medical Exam:	11/22/1995
Occupational Pilot:		Last Flight Review or Equivalent:	
Flight Time:	8500 hours (Total, all aircraft), 450 hours (Total, this make and model), 8500 hours (Pilot In Command, all aircraft), 200 hours (Last 90 days, all aircraft), 60 hours (Last 30 days, all aircraft), 5 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Beech	Registration:	N340K
Model/Series:	G18S G18S	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	BA605
Landing Gear Type:	Retractable - Tailwheel	Seats:	2
Date/Type of Last Inspection:	11/28/1995, AAIP	Certified Max Gross Wt.:	10100 lbs
Time Since Last Inspection:	15 Hours	Engines:	2 Reciprocating
Airframe Total Time:	6886 Hours	Engine Manufacturer:	P&W
ELT:	Installed, activated, did not aid in locating accident	Engine Model/Series:	R-985
Registered Owner:	BERING AIR, INC.	Rated Power:	450 hp
Operator:	BERING AIR, INC.	Operating Certificate(s) Held:	Commuter Air Carrier (135); On-demand Air Taxi (135)
Operator Does Business As:		Operator Designator Code:	FXTA

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:	Clear / 0 ft agl	Visibility	10 Miles
Lowest Ceiling:	None / 0 ft agl	Visibility (RVR):	0 ft
Wind Speed/Gusts:	Calm /	Turbulence Type Forecast/Actual:	/
Wind Direction:		Turbulence Severity Forecast/Actual:	/
Altimeter Setting:		Temperature/Dew Point:	-18°C
Precipitation and Obscuration:			
Departure Point:		Type of Flight Plan Filed:	VFR
Destination:	GAMBELL, AK (GAM)	Type of Clearance:	
Departure Time:	0000	Type of Airspace:	Class D

Airport Information

Airport:	NOME (OME)	Runway Surface Type:	Asphalt
Airport Elevation:	40 ft	Runway Surface Condition:	Dry
Runway Used:	27	IFR Approach:	None
Runway Length/Width:	6000 ft / 150 ft	VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	1 Minor	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	On-Ground
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Minor	Latitude, Longitude:	

Administrative Information

Investigator In Charge (IIC):	GEORGE KOBELNYK	Report Date:	04/18/1996
Additional Participating Persons:	STEVE KETZER; FAIRBANKS, 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 , or at 800-877-6799. Dockets released after this date are available at http://dms.nts.gov/pubdms/ .		

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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](#).