



# National Transportation Safety Board Aviation Accident Final Report

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<b>Location:</b>	ELKRIDGE, MD	<b>Accident Number:</b>	BF093FA016
<b>Date &amp; Time:</b>	12/10/1992, 1535 EST	<b>Registration:</b>	N7770B
<b>Aircraft:</b>	BEECH C-45G	<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 PILOT SUPERVISED THE LOADING OF THE AIRPLANE. ACCORDING TO INFO FROM A PERSON THAT HELPED LOAD THE PLANE, THE BILL OF LADING, AND ACTUAL WEIGHTS AND MEASUREMENTS OF THE CARGO AFTER THE ACCIDENT, THE PLANE WAS LOADED TO A GROSS WEIGHT OF 11,979 LBS WITH THE CG 2.7 INCHES BEHIND THE AFT LIMIT. AT THE DESTINATION, THE FLIGHT WAS VECTORED FOR AN ILS RUNWAY 10 APPROACH. ABOUT 3 MI FROM THE RUNWAY, THE PILOT WAS TOLD TO MAKE A MISSED APPROACH DUE TO INADEQUATE SEPARATION FROM TRAFFIC. THE PILOT ACKNOWLEDGED, BUT SOON THEREAFTER, RADAR CONTACT WITH THE PLANE WAS LOST. WITNESSES SAW THE PLANE DESCEND FROM A LOW CLOUD LAYER BEFORE IT CRASHED. ONE WITNESS SAID ITS WINGS WERE MOVING FROM SIDE TO SIDE AND THE PLANE WAS FALLING FASTER THAN IT WAS MOVING FORWARD. THERE WAS EVIDENCE THE PLANE HAD IMPACTED IN A FLAT ATTITUDE WITH LITTLE FORWARD MOVEMENT. FOUR CARGO STRAPS WERE FOUND LOOSE WITH NO SIGN OF TENSILE OVERLOAD; 3 OTHERS AND A RESTRAINING BOARD WERE FOUND LOOSE AS IF THEY HAD NOT BEEN USED. NO PREIMPACT MECHANICAL PROBLEM WAS FOUND. THE WIND WAS FROM 090 DEG AT 21 GUSTING 32 KTS.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: FAILURE OF THE PILOT TO PROPERLY SECURE THE CARGO, WHICH ALLOWED A SHIFT IN THE CENTER OF GRAVITY DURING A MISSED APPROACH MANEUVER AND RESULTED IN SUBSEQUENT LOSS OF AIRCRAFT CONTROL AND FLYING SPEED. A FACTOR RELATED TO THE ACCIDENT WAS FAILURE OF THE PILOT TO ASSURE THE AIRPLANE WAS LOADED WITHIN ITS PROPER WEIGHT AND BALANCE LIMITATIONS.

## Findings

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Occurrence #1: CARGO SHIFT

Phase of Operation: MISSED APPROACH (IFR)

Findings

1. (C) SECURITY OF CARGO - INADEQUATE - PILOT IN COMMAND
2. (F) AIRCRAFT WEIGHT AND BALANCE - IMPROPER - PILOT IN COMMAND
3. WEATHER CONDITION - GUSTS
4. WEATHER CONDITION - TURBULENCE
5. CARGO/BAGGAGE - NOT SECURED
6. TIE DOWN - INADEQUATE - PILOT IN COMMAND

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Occurrence #2: LOSS OF CONTROL - IN FLIGHT

Phase of Operation: MISSED APPROACH (IFR)

Findings

7. STALL/MUSH - UNCONTROLLED

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Occurrence #3: IN FLIGHT COLLISION WITH TERRAIN/WATER

Phase of Operation: DESCENT - UNCONTROLLED

## Factual Information

### Pilot Information

<b>Certificate:</b>	Airline Transport; Flight Instructor; Commercial	<b>Age:</b>	33, 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>	Airplane Multi-engine; Airplane Single-engine; Instrument Airplane	<b>Toxicology Performed:</b>	Yes
<b>Medical Certification:</b>	Class 1 Valid Medical--no waivers/lim.	<b>Last FAA Medical Exam:</b>	10/19/1992
<b>Occupational Pilot:</b>		<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	2658 hours (Total, all aircraft), 657 hours (Total, this make and model), 1560 hours (Pilot In Command, all aircraft), 180 hours (Last 90 days, all aircraft), 90 hours (Last 30 days, all aircraft), 3 hours (Last 24 hours, all aircraft)		

### Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	BEECH	<b>Registration:</b>	N7770B
<b>Model/Series:</b>	C-45G C-45G	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	No
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	AF-320
<b>Landing Gear Type:</b>	Retractable - Tricycle	<b>Seats:</b>	2
<b>Date/Type of Last Inspection:</b>	01/02/2000, AAIP	<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>	26436 Hours	<b>Engine Manufacturer:</b>	GARRETT
<b>ELT:</b>	Installed, not activated	<b>Engine Model/Series:</b>	TPE-331-1-101
<b>Registered Owner:</b>	KALITTA FLYING SERVICE	<b>Rated Power:</b>	620 hp
<b>Operator:</b>	KALITTA FLYING SERVICE	<b>Operating Certificate(s) Held:</b>	On-demand Air Taxi (135)
<b>Operator Does Business As:</b>		<b>Operator Designator Code:</b>	KKFA

## Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument Conditions	Condition of Light:	Day
Observation Facility, Elevation:	BWI, 146 ft msl	Distance from Accident Site:	4 Nautical Miles
Observation Time:	1543 EST	Direction from Accident Site:	113°
Lowest Cloud Condition:	Unknown / 0 ft agl	Visibility	3 Miles
Lowest Ceiling:	Broken / 900 ft agl	Visibility (RVR):	0 ft
Wind Speed/Gusts:	21 knots / 32 knots	Turbulence Type Forecast/Actual:	/
Wind Direction:	90°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29 inches Hg	Temperature/Dew Point:	6°C / 6°C
Precipitation and Obscuration:			
Departure Point:	DAYTON, OH (DAY)	Type of Flight Plan Filed:	IFR
Destination:	BALTIMORE, MD (BWI)	Type of Clearance:	IFR
Departure Time:	1319 EST	Type of Airspace:	Class D; Class E

## Airport Information

Airport:	BALT-WASH INT'L (BWI)	Runway Surface Type:	Asphalt
Airport Elevation:	146 ft	Runway Surface Condition:	Wet
Runway Used:	1	IFR Approach:	ILS
Runway Length/Width:	9452 ft / 200 ft	VFR Approach/Landing:	

## Wreckage and Impact Information

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

## Administrative Information

Investigator In Charge (IIC):	Jeffrey B Guzzetti	Report Date:	09/28/1993
Additional Participating Persons:	JEROME FRECHETTE; WASHINGTON, DC JEREMY AKEL; WASHINGTON, DC CYNTHIA KEEGAN; WASHINGTON, DC CARL LUDWIG; BALTIMORE, MD		
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 <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> .		

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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](#).