



# National Transportation Safety Board Aviation Accident Final Report

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<b>Location:</b>	Kutztown, PA	<b>Accident Number:</b>	NYC04FA137
<b>Date &amp; Time:</b>	06/02/2004, 1017 EDT	<b>Registration:</b>	N8681T
<b>Aircraft:</b>	Cessna 182C	<b>Aircraft Damage:</b>	Destroyed
<b>Defining Event:</b>		<b>Injuries:</b>	1 Fatal

**Flight Conducted Under:** Part 91: General Aviation - Other Work Use

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## Analysis

The student glider pilot was being towed by the accident tow plane for a local flight. Shortly after takeoff, the student glider pilot noticed that the tow rope had "some slack" in it, and that the tow plane did not appear to be climbing "at the rate he should have been." The student glider pilot made slight control adjustments to tighten the tow rope; however, the tow rope "went slack" again at 200-300 feet above the ground, and the airplane began to descend below the glider. The glider pilot then decided to release from the tow plane, and he turned back to the airport. During the turn, he observed the airplane drop its left wing slightly, and then begin a turn to the right. The airplane then impacted a quarry, and a post-crash fire ensued. Examination of the airplane and engine revealed no pre-flight mechanical deficiencies. During a previous training flight with the student glider pilot and accident tow pilot, the airplane began to descend during a climb, when the tow pilot failed to realize that the throttle had vibrated back to a lower power setting when he took his hand off it. According to the operator of the airplane, the tow pilot had performed approximately 70 tows during the past year; however, he had been "signed off" to fly without an instructor less than a month prior to the accident. The student glider pilot had accumulated approximately 50 hours of total flight experience. The FAA Glider Flying Handbook, states in part that "One of the most dangerous occurrences during the aerotow is allowing the glider to rise high above and losing sight of the towplane. The tension on the towrope by the glider pulls the towplane tail up, lowering its nose. If the glider continues to rise pulling the towplane tail higher, the towpilot may not be able to raise the nose. Ultimately, the towpilot may run out of up elevator authority. This situation can be critical if it occurs at altitudes below 500 feet AGL. Upon losing sight of the towplane, the glider pilot must release immediately."

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The towplane pilot's failure to maintain a climb while towing a glider for undetermined reasons, which resulted in the early release of the glider and the tow plane's subsequent impact with trees.

## Findings

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

### Findings

1. (C) CLIMB - NOT MAINTAINED - PILOT IN COMMAND  
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Occurrence #2: IN FLIGHT COLLISION WITH OBJECT  
Phase of Operation: DESCENT - UNCONTROLLED

### Findings

2. OBJECT - TREE(S)

## Factual Information

### HISTORY OF FLIGHT

On June 2, 2004, at 1017 eastern daylight time, a Cessna 182C, N8681T, was destroyed when it impacted a gravel quarry after departure from the Kutztown Airport (N31), Kutztown, Pennsylvania. The certified commercial pilot was fatally injured. Visual meteorological conditions prevailed, and no flight plan was filed for the local glider towing flight conducted under 14 CFR Part 91.

According to the student glider pilot, who was being towed by the accident airplane, it was his third tow of the day. He stated they departed from runway 17 at Kutztown, and performed a 45-degree left turn simultaneously, to avoid a high mound of dirt off the departure end of the runway. About 30 feet above the ground, the student pilot noticed that the tow rope had "some slack" in it. In an attempt to make the rope more taught, he made a slight right rudder correction and slight aft movement of the control stick. The student pilot noticed that the tow plane did not appear to be climbing "at the rate he should have been," the tow rope "went slack" again at 200-300 feet above the ground, and the airplane began to descend below the glider. The glider pilot then decided to release from the tow plane, and he turned back to the airport. During the turn, he observed the airplane drop the left wing slightly, and then begin a turn to the right. The airplane then impacted a quarry, and a post-crash fire ensued.

A witness, who was also a tow plane pilot, observed the accident from the Kutztown Airport. She stated that the takeoff of the airplane and glider appeared normal, until she observed the glider release at a "lower than normal altitude." The tow plane then appeared to descend and the glider returned to the airport. She then observed smoke and fire rising from the nearby rock quarry. The witness additionally reported that prior to the glider's release, she did not observe any abnormalities of the airplane or glider.

### PILOT INFORMATION

The pilot held a commercial pilot certificate with ratings for airplane single-engine land, and instrument airplane. He was also a certified flight instructor. His most recent Federal Aviation Administration (FAA) second class medical certificate was issued on September 11, 2003. At that time, the pilot reported 625 hours of total flight experience.

The pilot's logbook was not located. According to the owner of the Kutztown Airport, the pilot had been employed there for about one year. He had performed approximately 70 tows during that time; however, he had only been "signed off" to tow without an instructor since "a few weekends prior" to the accident.

The airport owner additionally stated that the pilot also conducted flights part-time for the Pennsylvania Bureau of Forestry. Examination of his most recent Bureau of Forestry Pilot Questionnaire, dated April 30, 2004, revealed he had accumulated 665 hours of total flight experience, 125 in the previous 12 months, and 15 hours in the previous 30 days.

### AIRCRAFT INFORMATION

A review of the airplane and engine logbooks revealed the last annual inspection was performed on November 14, 2003, with no anomalies noted.

### METEOROLOGICAL INFORMATION

The reported weather at the Lehigh Valley International Airport (ABE), Allentown, Pennsylvania, about 18 miles northeast of the accident site, at 0951, included wind from 250 degrees at 10 knots, 10 miles visibility, clear skies, temperature 70 degrees Fahrenheit, dew point 55 degrees Fahrenheit, and altimeter setting of 29.82 inches Hg.

#### WRECKAGE INFORMATION

The accident site was located about 1/2 mile from the departure end of runway 17. The wreckage was examined at the accident site on June 2-3, 2004, and all components of the airplane were accounted for at the scene. The wreckage path measured 353 feet from the initial impact point, to the main wreckage, and was oriented on an approximate heading of 180 degrees.

The initial impact point was a 50-foot tall tree at the northern edge of the quarry. The airplane's tow rope was located at the top of the tree, and several tree branches were located near the base of the tree. The tree branches were cut at an approximate 45-degree angle.

The second impact point was a 35-foot light pole about 60 feet beyond the initial impact point, and slightly to the left of the wreckage path. The left landing gear assembly, and the power supply box from the light pole, were located near the base of the pole. An impression was noted on the tire, which was identical to shape of the power supply box.

The main wreckage impacted a conveyer belt, inverted, and sustained severe post-crash fire damage. Both wings were draped over the conveyer belt, and the exposed fuselage was oriented on the upward surface of the conveyer belt. Both wing fuel tanks were ruptured, and examination of the fuel selector revealed it was in the 'both' position. All flight control surfaces remained attached to their respective attachment points, and flight control continuity was confirmed from the cockpit to all flight control surfaces. Examination of the flap handle and flap surfaces revealed the flaps were in the retracted position. A measurement of the horizontal stabilizer trim revealed it was set near the takeoff position. Examination of the tow hook on the underside of the empennage section revealed it was in the open position.

The engine was located under the inverted left wing. Both propeller blades had separated from the propeller hub; one blade was located under the left wing, and one blade was located about 5 feet in front of the engine, along the wreckage path. The tip of one blade was separated, and a 2-inch deep leading edge cut was noted on the other blade, about 28 inches from the blade root.

The engine was rotated by hand at the propeller flange. During rotation, thumb compression was obtained on all cylinders and valve train continuity was confirmed to the rear accessory drive.

Examination of the spark plugs revealed their electrodes were intact and exhibited "normal" wear. Both magnetos were removed from the engine, and during bench testing, produced spark at all ignition leads.

#### MEDICAL AND PATHOLOGICAL INFORMATION

The Berks County Coroner's Office performed an autopsy on the pilot on June 3, 2004.

The FAA Toxicology and Accident Research Laboratory, Oklahoma City, Oklahoma conducted toxicological testing on the pilot.

#### ADDITIONAL INFORMATION

In an interview with the student glider pilot, he stated that the last time he was at the airport on May 6, 2004, the tow pilot was still training with a certified flight instructor (CFI). However, when he arrived at the airport on the morning of the accident, the tow (accident) pilot stated he was "signed off" to tow the glider. The pilots then performed two tows to 1,000 feet followed by uneventful returns to the airport. Each flight lasted approximately 6-12 minutes. The glider pilot stated that prior to the third (accident) flight, the tow pilot seemed apprehensive about the way he was towing. He stated he had flown with the tow pilot prior to the accident; however, during those flights both the glider pilot and tow pilot had flight instructors with them. The accident flight was the first flight in which both pilots were alone.

The student glider pilot additionally stated that during a previous training flight with the tow pilot, as the airplane was climbing to altitude, it began to descend when the tow pilot failed to realize that the throttle had vibrated back to a lower power setting when he took his hand off it.

According to the FAA Glider Flying Handbook, FAA-H-8083-13, chapter 7, states the following about aerotow abnormal procedures:

"One of the most dangerous occurrences during the aerotow is allowing the glider to rise high above and losing sight of the towplane. The tension on the towrope by the glider pulls the towplane tail up, lowering its nose. If the glider continues to rise pulling the towplane tail higher, the towpilot may not be able to raise the nose. Ultimately, the towpilot may run out of up elevator authority. This situation can be critical if it occurs at altitudes below 500 feet AGL. Upon losing sight of the towplane, the glider pilot must release immediately."

According to the student pilot, he had accumulated approximately 50 hours of total flight experience in gliders.

#### Fueling History

Examination of airport fueling records revealed the airplane was last fueled on May 30, 2004, with 31.1 gallons of fuel. The airport owner stated that the day of the accident was the next time the airplane flew after it had been refueled.

#### Wreckage Release

The wreckage was released to a representative of the owner's insurance company on April 29, 2005.

## Pilot Information

<b>Certificate:</b>	Flight Instructor; Commercial	<b>Age:</b>	49, Male
<b>Airplane Rating(s):</b>	Single-engine Land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	Airplane Single-engine	<b>Toxicology Performed:</b>	Yes
<b>Medical Certification:</b>	Class 2 Valid Medical--no waivers/lim.	<b>Last FAA Medical Exam:</b>	09/01/2003
<b>Occupational Pilot:</b>		<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	300 hours (Total, this make and model), 665 hours (Pilot In Command, all aircraft), 15 hours (Last 30 days, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Cessna	<b>Registration:</b>	N8681T
<b>Model/Series:</b>	182C	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	No
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	52581
<b>Landing Gear Type:</b>	Tricycle	<b>Seats:</b>	4
<b>Date/Type of Last Inspection:</b>	11/01/2003, Annual	<b>Certified Max Gross Wt.:</b>	3100 lbs
<b>Time Since Last Inspection:</b>	77 Hours	<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	5340 Hours as of last inspection	<b>Engine Manufacturer:</b>	Continental
<b>ELT:</b>	Installed, not activated	<b>Engine Model/Series:</b>	O-470
<b>Registered Owner:</b>	Granite Sales Inc DBA	<b>Rated Power:</b>	180 hp
<b>Operator:</b>	Kutztown Airport	<b>Operating Certificate(s) Held:</b>	None

## Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	ABE, 394 ft msl	Distance from Accident Site:	18 Nautical Miles
Observation Time:	0951 EDT	Direction from Accident Site:	40°
Lowest Cloud Condition:	Clear	Visibility	10 Miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	10 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	250°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29.82 inches Hg	Temperature/Dew Point:	21° C / 13° C
Precipitation and Obscuration:			
Departure Point:	Kutztown, PA (N31)	Type of Flight Plan Filed:	None
Destination:	(N31)	Type of Clearance:	None
Departure Time:	1016 EDT	Type of Airspace:	Class G

## Airport Information

Airport:	Kutztown Airport (N31)	Runway Surface Type:	Unknown
Airport Elevation:	512 ft	Runway Surface Condition:	Unknown
Runway Used:	NA	IFR Approach:	Unknown
Runway Length/Width:		VFR Approach/Landing:	Unknown

## 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:	On-Ground
Total Injuries:	1 Fatal	Latitude, Longitude:	40.499444, -75.782778

## Administrative Information

Investigator In Charge (IIC):	Jill M Andrews	Report Date:	09/13/2005
Additional Participating Persons:	William Rush; FAA/FSDO; Allentown, PA Todd Sigler; Cessna Aircraft; Wichita, KS John Kent; Teledyne Continental Motors; Seagoville, TX		
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](#).