



National Transportation Safety Board Aviation Accident Final Report

Location:	HILLTOWN, PA	Accident Number:	IAD99FA041B
Date & Time:	05/01/1999, 1334 EDT	Registration:	N47938
Aircraft:	Burkhart Grob G-103 TWIN II	Aircraft Damage:	Destroyed
Defining Event:		Injuries:	2 Fatal

Flight Conducted Under: Part 91: General Aviation - Instructional

Analysis

The Cessna was in an approximate 10 degree right bank climbing turn, towing a glider. As the Cessna reached approximately 1,000 feet; the pilot (witness) of the glider being towed saw another glider, a Grob, approaching from his 11:00 position. The Grob was in an approximate 15 degree right bank descending turn. The pilot being towed believed that the Cessna and Grob were on a collision course, and he released from the tow aircraft. He saw the two aircraft collide, and the Cessna spin to the ground. He did not see the Grob after impact, but saw fluttering debris. Both the Cessna and Grob were equipped with communication radios.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The inadequate lookout of both pilots, and the pilot of the other aircraft.

Findings

Occurrence #1: MIDAIR COLLISION

Phase of Operation: DESCENT

Findings

1. (C) VISUAL LOOKOUT - INADEQUATE - PILOT IN COMMAND(CFI)
2. (C) VISUAL LOOKOUT - INADEQUATE - DUAL STUDENT
3. (C) VISUAL LOOKOUT - INADEQUATE - PILOT OF OTHER AIRCRAFT

Occurrence #2: LOSS OF CONTROL - IN FLIGHT

Phase of Operation: DESCENT

Occurrence #3: IN FLIGHT COLLISION WITH TERRAIN/WATER

Phase of Operation: DESCENT - UNCONTROLLED

Factual Information

HISTORY OF FLIGHT

On May 1, 1999, about 1334 eastern daylight time, a Cessna 305A, N5171G, and a Burkhart Grob, G-103 Twin II, N47938, were destroyed following a midair collision within 1 mile of the Philadelphia Gliderport, Hilltown, Pennsylvania. The Cessna was in a climb, towing a glider; while the Grob was maneuvering. The certificated commercial pilot (Cessna), the certificated flight instructor (Grob), and the certificated private pilot (Grob) were fatally injured. The Cessna and Grob were owned and operated by the Philadelphia Glider Council, located at the Philadelphia Gliderport. Visual meteorological conditions prevailed, and no flight plan was filed for either the local tow flight or instructional glider flight conducted under 14 CFR Part 91.

The pilot, that had towed the Grob aloft, stated that they had taken off at 1325. He recalled that the private pilot, who was receiving instruction in the Grob, was seated in the front seat, and the certificated flight instructor (CFI) was in the rear seat. He reported that the prevailing winds were from the east, and as he towed eastward, the Grob released at 2,500 feet above ground level (AGL). He stated that he returned to the gliderport and landed without seeing the Cessna.

The pilot, of a single seat glider being towed aloft by the Cessna, stated that after takeoff, and reaching 400 feet AGL, the Cessna turned left to a northerly heading. He stated that the Cessna then started a 10 degree right angle of bank turn. He reported that about 1,000 feet AGL, while turning through a southeasterly heading, he spotted the Grob at his 11:00 o'clock position, about 1,500 feet away, and about 100 feet above his position.

He also stated:

"...The Grob was (coming towards us) in a right banking turn with about 15 degrees of bank. As the aircraft continued, it became apparent to me that the flight path of the Grob and the path I was on following the tow plane might cause a collision if no evasive action was taken. I pulled the rope release at about 1200 feet AGL, and turned to the right with about a 45 degree banking turn, until my heading had changed about 60 degrees. I leveled off and looked off to my left in time to see Grob and Cessna approach and collide. I do not think that either aircraft was taking evasive action."

The pilot further stated:

"My impression is that the collision occurred about 5 seconds after I released from tow. I was probably 100 to 200 yards away from the impact. I believe the Grob and Cessna passed each other right hand side to right hand side...I kept watching the Cessna. There appeared to be a large portion of one wing's leading edge missing. The Cessna spun in the direction of the damaged wing. I think he made about two complete revolutions before impacting the ground almost straight down. I looked for the glider in the air, but only saw fluttering debris."

The Cessna and the Grob were both equipped with communication radios.

The accident occurred during the hours of daylight; located approximately 40 degrees, 20 minutes north longitude, and 75 degrees, 14 minutes west latitude.

PILOT INFORMATION

The pilot of the Cessna held a commercial pilot certificate with a rating for gliders; and a

private pilot certificate with a rating for airplane single engine land. He also held a flight instructor certificate for gliders; and an airframe and powerplant mechanic certificate.

His most recent Federal Aviation Administration (FAA) third class medical certificate was issued on May, 19, 1997. At that time, he reported a total flight experience of 2,127 hours.

The instructor in the Grob held a commercial pilot certificate; with ratings for airplane single engine land, single engine sea, multiengine land, and gliders. He also held a flight instructor certificate; with ratings for airplane single engine, and gliders.

His most recent FAA second class medical certificate was issued on July 29, 1998. At that time, he reported a total flight experience of 3,750 hours.

The other pilot in the Grob held a private pilot certificate, with a rating for gliders. According to FAA records, he did not have a medical certificate.

WRECKAGE DESCRIPTION

The Cessna impacted terrain next to a residential driveway, at the base of a 40 foot tall pine tree. All the debris was confined to a 20 foot radius from the main wreckage, with the fuselage facing a southeasterly heading. The Cessna's left aileron was found on the roof of a house about 1/4 mile northwest of the main wreckage. The left wing tip, and about a 2 foot section of the left wing's leading edge metal, were found in a field about 500 feet northwest of the aileron. Imbedded in the 2 foot section was material similar to that utilized for the wing spars of the Grob.

The Grob impacted the terrain in an open field about 400 feet northeast of the Cessna's left aileron. All the debris from the main wreckage was located in an approximate 30 foot radius. Ground scarring and debris from the Grob were oriented towards the northeast, and the wreckage came to rest in an upright attitude, facing towards the southwest. The left wing and the empennage were intact, but the damage appeared similar to that of terrain impact. The Grob's right aileron was found about 100 feet southwest of the Cessna's aileron. A 15 foot section of the Grob's right wing was found about 250 feet northeast of the Cessna's aileron. Sections of the Grob's right wing spar were found in the field near the Cessna's left wing tip.

On May 2, 1999, Safety Board Investigators and a FAA Inspector examined the wreckage of the Cessna and the Grob. The cockpit of the Cessna was destroyed, with pieces found throughout the impact crater. The cockpit of the Grob was partially intact. Flight control continuity was verified for both airplanes.

The Cessna's propeller, which contained chordwise scratching and S-bending, was found in the main crater detached from the engine. The crankshaft was broken, the engine casing was shattered in the bottom front area, and the accessories on the back section of the engine were detached. About 4 feet inboard of the Cessna's right wing tip, was a 2 foot indentation which contained black rubber markings and symmetrical metal scratches. Telephone and electrical power lines, made of wrapped metal wiring and coated with black rubber were located about 25 feet above the wreckage. Those lines were found sagging immediately above the wreckage. The electrical and telephone service to the local homes was lost following the Cessna's impact.

MEDICAL AND PATHOLOGICAL INFORMATION

An autopsy was performed on the pilots by Dr. Halbert Fillinger Jr. of the Bucks County Coroner's Office, on May 2, 1999.

Toxicological testing was conducted at the FAA Toxicology Accident Research Laboratory, Oklahoma City, Oklahoma. The tests were negative, for the Cessna pilot and the private pilot in the Grob, for drugs and alcohol.

The toxicological tests for the flight instructor in the Grob revealed:

"0.773 (ug/mL, ug/g) FLUOXETINE detected in Blood 0.374 (ug/mL, ug/g) NORFLUOXETINE detected in Blood FLUOXETINE detected in Urine DEXTROMENTHORPHAN detected in Urine PSEUDOEPHEDRINE detected in Urine 6.4 (ug/ml, ug/g) ACETAMINOPHEN detected in Blood 298 (ug/ml, ug/g) ACETAMINOPHEN detected in Urine"

FEDERAL AVIATION REGULATIONS

Federal Aviation Regulation (FAR) 91.113 (b) stated:

"General. When weather conditions permit, regardless of whether an operation is conducted under instrument flight rules or visual flight rules, vigilance shall be maintained by each person operating an aircraft so as to see and avoid other aircraft."

FAR 91.113 (d) stated:

"Converging....If the aircraft are of different categories - ... (2) A glider has the right-of-way over an airship, airplane, or rotorcraft...However, an aircraft towing or refueling other aircraft has the right-of-way over all other engine driven aircraft."

ADDITIONAL INFORMATION

The wreckage of the Cessna and the Grob were released to a representative of the Philadelphia Glider Council on May 2, 1999. .

Pilot Information

Certificate:	Flight Instructor; Commercial	Age:	47, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land; Single-engine Sea	Seat Occupied:	Right
Other Aircraft Rating(s):	Glider	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	Airplane Single-engine; Glider	Toxicology Performed:	Yes
Medical Certification:	Class 2 Valid Medical--w/ waivers/lim.	Last FAA Medical Exam:	07/29/1998
Occupational Pilot:		Last Flight Review or Equivalent:	
Flight Time:	3750 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Burkhart Grob	Registration:	N47938
Model/Series:	G-103 TWIN II G-103 TWIN	Aircraft Category:	Glider
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	3841-K-87
Landing Gear Type:		Seats:	2
Date/Type of Last Inspection:	03/13/1999, Annual	Certified Max Gross Wt.:	1279 lbs
Time Since Last Inspection:	10 Hours	Engines:	Unknown
Airframe Total Time:	1810 Hours	Engine Manufacturer:	
ELT:	Not installed	Engine Model/Series:	
Registered Owner:	PHILADELPHIA GLIDER COUNCIL	Rated Power:	
Operator:	PHILADELPHIA GLIDER COUNCIL	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	NXX, 362 ft msl	Distance from Accident Site:	10 Nautical Miles
Observation Time:	1355 EDT	Direction from Accident Site:	180°
Lowest Cloud Condition:	Scattered / 25000 ft agl	Visibility	7 Miles
Lowest Ceiling:	None / 0 ft agl	Visibility (RVR):	0 ft
Wind Speed/Gusts:	12 knots / 17 knots	Turbulence Type Forecast/Actual:	/
Wind Direction:	50°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30 inches Hg	Temperature/Dew Point:	18° C / 1° C
Precipitation and Obscuration:			
Departure Point:	, PA (0PA0)	Type of Flight Plan Filed:	None
Destination:		Type of Clearance:	None
Departure Time:	1320 EDT	Type of Airspace:	Class G

Airport Information

Airport:	PHILADELPHIA GLIDER COUNC (OPAP)	Runway Surface Type:	Grass/turf
Airport Elevation:	670 ft	Runway Surface Condition:	Dry
Runway Used:	7	IFR Approach:	None
Runway Length/Width:	2600 ft / 100 ft	VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	2 Fatal	Aircraft Damage:	Destroyed
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 Fatal	Latitude, Longitude:	

Administrative Information

Investigator In Charge (IIC):	JIM CAIN	Report Date:	06/23/2000
Additional Participating Persons:	MARTY LYNN; ALLENTOWN, PA		
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](#).