



National Transportation Safety Board Aviation Accident Final Report

Location:	Hilltown, PA	Accident Number:	ERA12LA455
Date & Time:	07/13/2012, 1530 EDT	Registration:	N5448G
Aircraft:	BURKHART GROB G 103 TWIN II	Aircraft Damage:	Substantial
Defining Event:	Simulated/training event	Injuries:	2 Serious
Flight Conducted Under:	Part 91: General Aviation - Instructional		

Analysis

The flight instructor-in-command was in the rear seat, and the flight instructor receiving instruction was in the front seat for flight instructor winch-launch glider training. The two pilots had flown multiple launches earlier that day, with each flight preceded by a briefing. After practicing recoveries from simulated rope breaks at 400 feet and 10 feet above ground level (agl), the intent for the accident flight was to simulate a rope break at 200 feet agl, which the flight instructor-in-command expected would result in a straight-ahead landing. The ground roll, takeoff, and transition to climb were “normal,” and the flight instructor in command pulled the release lever about 150 feet agl. The flight instructor receiving instruction nosed the glider over, and established a wings-level airspeed of about 54 knots. However, instead of landing straight ahead, the flight instructor receiving instruction turned the glider to the right, then to the left, and attempted to land opposite the direction of takeoff. There was insufficient altitude to complete the maneuver, and the glider impacted trees. The flight instructor-in-command could not remember the latter part of the flight due to head trauma, but the flight instructor receiving instruction stated that the flight instructor in command did not take control of the glider at any time before impact. Neither pilot reported any preexisting mechanical anomalies that would have precluded the glider’s normal operation.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The improper decision of the flight instructor receiving instruction to attempt a course reversal rather than land straight ahead following a simulated low-level rope break, and the inadequate remedial action of the flight instructor-in-command for allowing him to do so.

Findings

Aircraft	Descent/approach/glide path - Not attained/maintained (Cause) Altitude - Attain/maintain not possible
Personnel issues	Decision making/judgment - Pilot (Cause) Incomplete action - Instructor/check pilot (Cause)

Factual Information

On July 13, 2012, about 1530 eastern daylight time, a Burkhart Grob G 103 Twin II, N5448G, was substantially damaged when it impacted trees and terrain during a simulated low altitude launch failure after a launch from Philadelphia Gliderport (OPAO), Hilltown, Pennsylvania. The two flight instructors onboard were seriously injured. Visual meteorological conditions prevailed, and no flight plan had been filed for the local instructional flight, which was conducted under the provisions of 14 Code of Federal Regulations Part 91.

According to the flight instructor in command (FIIC), the Philadelphia Glider Council was conducting winch launch training for its glider-rated flight instructors who did not have a ground launch endorsement, and for recently-endorsed instructors to gain additional ground winch teaching experience. Prior to beginning flight operations, a group briefing was conducted for participating personnel, including the launch crew and the flight instructors providing, as well as receiving instruction.

The gliderport had multiple turf runways, including runway 7/25, which was 2,450 feet long and 300 feet wide. According to the FIIC, the glider was set up on east end of runway 25, and the winch was set up about 4,000 feet away, on the north side of the runway overrun.

The FIIC and the flight instructor under instruction (FIUI) had flown multiple launches previously that day, with the FIUI noting that there were simulated rope breaks on his previous two launches at 400 feet above ground level (agl) and 10 feet agl. Both pilots concurred that the accident flight was briefed as a simulated rope break at 200 feet.

According to the FIIC, the simulated rope break was expected to result in a landing straight ahead on the runway. The ground roll, takeoff and transition to full climb were “normal,” and about 150 feet, the FIIC pulled the release to simulate a launch failure. The FIUI executed a “normal” recovery from a full climb to straight and level flight at 100 feet and 52 knots. The glider subsequently turned to the left, which was all the FIIC could recall due to head trauma.

According to the FIUI, after the FIIC pulled the release, he executed an “assertive round over” and established an airspeed of 54 knots. At that point, he felt that the glider was “considerably” lower than 200 feet agl. He initiated a right turn for a few seconds, then rolled wings level. He recalled that the FIIC said something to him “about having a plan,” and then, a few seconds later, he made the decision to make a 180-degree left turn to land on runway 7. The glider had insufficient altitude and impacted trees. The FIUI also recalled that the FIIC did not take control of the glider and that the FIUI was operating the flight controls when the glider hit the trees and the ground.

Witnesses differed on specifics as to what occurred after the release, with one stating that after the glider achieved a 5-degree nose-down attitude, the dive brakes partially deployed, then retracted. The glider then made a slight right turn, followed by a turn to the left, “which appeared to be a low-level return to the field.” The witness was concerned that the glider was going to stall/spin at 100 feet, but it continued in a left turn, then rolled wings level before impacting trees.

Another witness saw that after the glider was released, it continued in level flight for about 10 seconds, during which, it started a “gentle” right turn. It then rolled into a “medium bank turn” to the left, “attempting a 180-degree turn to return to the departure runway, this all occurring approx. 100 feet agl.” From the witness’s position, it was clear to him that the glider was not

going to clear trees. During the last seconds, the dive brakes, which had been closed during the earlier part of the flight, opened and closed, and the glider disappeared behind the tree line.

One of the witnesses also stated that when the simulated rope break occurred, the glider was low enough to open the dive brakes and land straight ahead.

Neither flight instructor reported any preexisting mechanical anomalies that would have precluded the glider's normal operation.

History of Flight

Initial climb	Glider tow event Simulated/training event (Defining event) Attempted remediation/recovery
Maneuvering	Controlled flight into terr/obj (CFIT)

Flight Instructor Information

Certificate:	Flight Instructor; Commercial	Age:	65, Male
Airplane Rating(s):	None	Seat Occupied:	Rear
Other Aircraft Rating(s):	Glider	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	None	Second Pilot Present:	Yes
Instructor Rating(s):	Glider	Toxicology Performed:	No
Medical Certification:	None	Last FAA Medical Exam:	
Occupational Pilot:	No	Last Flight Review or Equivalent:	06/07/2011
Flight Time:	1600 hours (Total, all aircraft), 249 hours (Total, this make and model), 1587 hours (Pilot In Command, all aircraft), 12 hours (Last 90 days, all aircraft), 4 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Student Pilot Information

Certificate:	Airline Transport; Flight Instructor; Commercial; Flight Engineer	Age:	67, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Front
Other Aircraft Rating(s):	Glider	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	Glider	Toxicology Performed:	No
Medical Certification:	Class 2 With Waivers/Limitations	Last FAA Medical Exam:	12/12/2012
Occupational Pilot:	No	Last Flight Review or Equivalent:	10/13/2012
Flight Time:	15990 hours (Total, all aircraft), 390 hours (Total, this make and model), 8900 hours (Pilot In Command, all aircraft), 6 hours (Last 90 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	BURKHART GROB	Registration:	N5448G
Model/Series:	G 103 TWIN II	Aircraft Category:	Glider
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	3868-K-109
Landing Gear Type:	Tandem	Seats:	2
Date/Type of Last Inspection:	03/31/2012, Annual	Certified Max Gross Wt.:	
Time Since Last Inspection:	147 Hours	Engines:	0
Airframe Total Time:	3222 Hours at time of accident	Engine Manufacturer:	
ELT:	Not installed	Engine Model/Series:	
Registered Owner:	PHILADELPHIA GLIDER COUNCIL INC	Rated Power:	
Operator:	PHILADELPHIA GLIDER COUNCIL INC	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	DYL, 394 ft msl	Distance from Accident Site:	5 Nautical Miles
Observation Time:	1554 EDT	Direction from Accident Site:	90°
Lowest Cloud Condition:	Few / 3700 ft agl	Visibility	10 Miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	5 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	260°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.18 inches Hg	Temperature/Dew Point:	30° C / 16° C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Hilltown, PA (OPA0)	Type of Flight Plan Filed:	None
Destination:	Hilltown, PA (OPA0)	Type of Clearance:	None
Departure Time:	1530 EDT	Type of Airspace:	

Airport Information

Airport:	Philadelphia Gliderport (OPA0)	Runway Surface Type:	Grass/turf
Airport Elevation:	670 ft	Runway Surface Condition:	Dry
Runway Used:	25	IFR Approach:	None
Runway Length/Width:	2450 ft / 300 ft	VFR Approach/Landing:	Simulated Forced Landing

Wreckage and Impact Information

Crew Injuries:	2 Serious	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 Serious	Latitude, Longitude:	40.328333, -75.241667 (est)

Administrative Information

Investigator In Charge (IIC):	Paul R Cox	Report Date:	09/12/2013
Additional Participating Persons:	Robert Hager; FAA FSDO; Allentown, PA		
Publish Date:	09/12/2013		
Investigation Docket:	http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=84330		

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