



National Transportation Safety Board Aviation Accident Final Report

Location:	MARION, OH	Accident Number:	NYC97LA085
Date & Time:	05/04/1997, 1240 EDT	Registration:	N8711R
Aircraft:	Marsh-Turner BG-12A	Aircraft Damage:	Destroyed
Defining Event:		Injuries:	1 Fatal
Flight Conducted Under:	Part 91: General Aviation - Ferry		

Analysis

With the owner at the flight controls, the experimental homebuilt glider was under tow to take it to another airport. Witnesses reported that about 1 minute after departure, the glider entered into a series of divergent pitch oscillations which terminated in a near vertical dive into a field. The tow rope separated during the oscillations. According to an FAA report, '...The rod end of the elevator/aileron control stick was found pulled out of push rod. The meal casing that the rod end fitted into was crushed. The rod end contained 1 fastener (rivet) core with signs of fretting and scoring, with the remaining attaching fastener core missing....' The last annual inspection was performed in August 1995. The glider was operated on an FAA special flight permit, which required either an inspection by an aircraft mechanic or a repair shop before the flight. No record of the inspection was found by the FAA inspectors.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: Disconnection of the elevator control rod which resulted in the loss of elevator control. A factor was failure to complete the required maintenance inspection.

Findings

Occurrence #1: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION
Phase of Operation: CLIMB - TO CRUISE

Findings

1. (C) FLT CONTROL SYST,ELEVATOR CONTROL CABLE/ROD - DISCONNECTED
2. (F) MAINTENANCE,INSPECTION - NOT PERFORMED - PILOT IN COMMAND

Occurrence #2: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: CLIMB - TO CRUISE

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

Factual Information

On May 4, 1997, about 1240 eastern daylight time, an experimental, homebuilt glider, a Marsh-Turner, BG-12A, struck terrain after departure from the Marion Municipal Airport, Marion, Ohio. The glider was destroyed, and the certificated commercial pilot was fatally injured. Visual meteorological conditions prevailed, for the ferry flight which departed Marion Airport about 1 minute prior. No flight plan had been filed for the flight which was conducted under 14 CFR Part 91..

The glider was under tow and destined for the museum at Port Columbus Airport, Columbus, Ohio.

The tow plane pilot stated:

"...At approximately 1,000 foot above ground he [the glider pilot] indicated that he wished to slow back a little due to turbulence. I complied. A minute or so later Mark [the glider pilot] got way out of normal tow position and this continued until he went off tow. I radioed Marion [departure airport] that something must be wrong and we were headed back to the airport. When I spotted the glider it was descending at a high rate of speed with some oscillations in the pitch axis. Then it nosed over and went in, impacting the ground nearly vertical."

A witness stated:

"...As the planes continued to climb N/E of field, I noticed Mark's position began to vary., Mark began vertical position changes. BG-12 [glider] appeared to not be able to hold proper tow position. I looked away for a few seconds and when I looked back the BG-12 was extremely high and right of tow plane. BG-12 released, turned northerly, began a return to the airport, nose went down, wing level, descend at approx. 80 degree angle, with a few pitch changes. Descent angle varied between 75-90 degrees...."

Another witness stated, "...I looked up and saw Mark's sailplane start to oscillate with high and low pitches about three times and then the plane pitched nearly full nose down and flew nearly straight into the ground at a high rate of speed."

In a written report, an inspector from the Federal Aviation Administration (FAA) who had examined the glider at the accident site stated:

"...Elevator system consisted of push-pull tube, utilizing an inline bellcrank design. The rod end of the elevator/aileron control stick was found pulled out of push rod. The metal casing that the rod end fitted into was crushed. The rod end contained 1 fastener (rivet) core with signs of fretting and scoring, with the remaining attaching fastener core missing. Tow rope revealed that it had broken at an estimate of 2 to 3 feet from the glider attachment point...."

The glider was on a special flight permit. Item 3 of the permit stated, " This permit is not valid unless the aircraft is inspected by a certificated Airframe and Powerplant Mechanic, or an appropriately rated Repair Station, and a notation made in the aircraft records that the aircraft is safe for flight."

Additionally, the FAA Inspector's report stated, "...The pilot was not observed preflighting the aircraft and no records were found indicating an inspection being performed prior to departure to validate the issuance of a special flight permit...."

An autopsy was conducted on May 5, 1997, by Patrick M. Fardal, M.D, Chief Forensic

Pathologist, Franklin County, Ohio.

Toxicological testing conducted by the FAA Civil Aero Medical Institute (CAMI), Oklahoma City, Oklahoma, revealed verapamil and norverapamil in the pilot's liver fluid. A check of the pilot's most recent airman medical application, dated October 23, 1996, revealed that the pilot had not listed any drugs as being taken.

Pilot Information

Certificate:	Flight Instructor; Commercial	Age:	74, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Center
Other Aircraft Rating(s):	Glider	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	Glider	Toxicology Performed:	Yes
Medical Certification:	Class 2 Valid Medical--w/ waivers/lim.	Last Medical Exam:	10/23/1996
Occupational Pilot:		Last Flight Review or Equivalent:	
Flight Time:	19605 hours (Total, all aircraft), 50 hours (Total, this make and model), 12 hours (Last 90 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	Marsh-Turner	Registration:	N8711R
Model/Series:	BG-12A BG-12A	Aircraft Category:	Glider
Year of Manufacture:		Amateur Built:	Yes
Airworthiness Certificate:	Experimental	Serial Number:	12035
Landing Gear Type:	Ski/wheel	Seats:	1
Date/Type of Last Inspection:	08/24/1995, Annual	Certified Max Gross Wt.:	606 lbs
Time Since Last Inspection:	0 Hours	Engines:	Unknown
Airframe Total Time:	988 Hours	Engine Manufacturer:	
ELT:	Not installed	Engine Model/Series:	
Registered Owner:	MARK A. SAVAGE	Rated Power:	
Operator:	MARK A. SAVAGE	Air Carrier Operating Certificate:	None
Operator Does Business As:	CENTRAL OHIO SOARING ASSOC.	Operator Designator Code:	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	MFD, 1297 ft msl	Observation Time:	1254 EDT
Distance from Accident Site:	28 Nautical Miles	Direction from Accident Site:	70°
Lowest Cloud Condition:	Scattered / 4400 ft agl	Temperature/Dew Point:	11 °C / 2 °C
Lowest Ceiling:	None / 0 ft agl	Visibility	10 Miles
Wind Speed/Gusts, Direction:	9 knots, 270°	Visibility (RVR):	0 ft
Altimeter Setting:	30 inches Hg	Visibility (RVV):	0 Miles
Precipitation and Obscuration:			
Departure Point:	(MNN)	Type of Flight Plan Filed:	None
Destination:	COLUMBUS, OH (CMH)	Type of Clearance:	None
Departure Time:	1239 EDT	Type of Airspace:	Class E

Wreckage and Impact Information

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

Administrative Information

Investigator In Charge (IIC):	ROBERT L HANCOCK	Adopted Date:	04/10/1998
Additional Participating Persons:	PAUL TROUTWINE; COLUMBUS, OH		
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/ .		

The National Transportation Safety Board (NTSB), established in 1967, is an independent federal agency mandated by Congress through the Independent Safety Board Act of 1974 to investigate transportation accidents, determine the probable causes of the accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

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.