Aviation Investigation Final Report

Location:	GROVELAND, California	**Accident Number:**	LAX96LA152
Date & Time:	April 2, 1996, 10:58 Local	**Registration:**	N59LP
Aircraft:	POWELL GLASAIR	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	1 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot (part owner of the aircraft) held an A&P certificate & had completed a condition/annual inspection of the aircraft before the flight. The aircraft co-owner stated there was a problem with the throttle cable, & the pilot was going to order a new one, but had not yet done so. Witnesses said the aircraft departed straight out after takeoff. About 4 minutes later, it entered a downwind to the pattern, low & very close to the runway. The witnesses estimated the aircraft's altitude was between 200 and 300 feet agl. At first, some witnesses thought the pilot was going to make a downwind landing on the runway. The witnesses said the aircraft made a tight turn from downwind to base. During the base-to-final turn, the right wing dropped, and the aircraft entered a nose-down descent and crashed. The witnesses heard the engine running before impact, but they described the sound as 'not full power.' An examination of the engine & controls revealed that a clip, which secured the accelerator pump plunger to its actuation shaft in the carburetor, was missing & the pump was inoperative. The throttle cable housing/actuating shaft at the carburetor end was found separated from the cable sheath, exposing the unsupported inside cable. A piece of welding rod was found bent around the housing end & taped to the sheath. The cable was removed from the aircraft & operationally tested. During push-pull tests, the carburetor end would sometimes move an amount corresponding to the cockpit end input; at other times, the carburetor end would move only slightly.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the pilot's decision to fly the aircraft with a known mechanical discrepancy in the throttle linkage, which resulted in a partial loss of engine power; and his failure to maintain an adequate airspeed while maneuvering for an emergency landing, which resulted in an

inadvertent stall/spin. Inadequate maintenance/annual inspection was a related factor.

Findings

Occurrence #1: LOSS OF ENGINE POWER(PARTIAL) - MECH FAILURE/MALF
Phase of Operation: CLIMB

Findings
1. (F) MAINTENANCE,ANNUAL INSPECTION - INADEQUATE - OWNER/PILOT MECHANIC
2. (C) THROTTLE/POWER LEVER,CABLE - LOOSE
3. (C) OPERATION WITH KNOWN DEFICIENCIES IN EQUIPMENT - ATTEMPTED - OWNER/PILOT MECHANIC

Occurrence #2: FORCED LANDING
Phase of Operation: EMERGENCY DESCENT/LANDING

Occurrence #3: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: EMERGENCY DESCENT/LANDING

Findings
4. (C) AIRSPEED - NOT MAINTAINED - PILOT IN COMMAND
5. (C) STALL/SPIN - INADVERTENT - PILOT IN COMMAND

Occurrence #4: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: DESCENT - UNCONTROLLED

Factual Information

On April 2, 1996, at 1058 hours Pacific standard time, a Powell Glasair homebuilt experimental airplane, N59LP, collided with trees and the ground following a loss of control during the base-to-final turn at the Pine Mountain Lake Airport, Groveland, California. The aircraft was owned and operated by the pilot. Visual meteorological conditions prevailed and no flight plan was filed for the local area personal flight. The aircraft was destroyed in the collision sequence. The private pilot, the sole occupant, sustained fatal injuries. The flight originated from the airport about 4 minutes prior to the accident.

Ground witnesses said the aircraft departed straight out following takeoff. About 4 minutes later, it made a downwind entry to the pattern "low and very close to the runway." The witnesses consistently estimated the aircraft's altitude as between 200 and 300 feet agl. One witness said the aircraft was so close that at first he thought the pilot was going to make a downwind landing on the runway. The witnesses said the aircraft made a tight turn from downwind to base. During the base-to-final turn, the right wing dropped and the aircraft entered a nose-down vertical descent to ground impact in a tree. The witnesses said they heard engine sounds throughout, however, they were described as "not full power."

The pilot holds an FAA Airframe and Powerplant mechanics certificate. Immediately prior to the accident flight, the pilot completed a condition/annual inspection on the aircraft and the airframe and engine logbooks were annotated to reflect the inspection. During a telephone interview, the aircraft co-owner stated that they had been having problems with the throttle cable and the pilot was going to order a new one.

An FAA airworthiness inspector responded to the accident site and interviewed witnesses and examined the wreckage. The engine portion of the wreckage examination was conducted with the assistance of a technical representative from Textron Lycoming Engines. Their respective reports are attached to this report.

The FAA inspector reported that he found no discrepancies with the aircraft's control system. Fuel was found in the aircraft tanks and all lines to the carburetor.

The engine crankshaft rotated easily by hand, with compression developed in each cylinder. Accessory gear and valve train continuity was established throughout the engine, with normal valve lift developed. Both magnetos were timed to 25 degrees before top dead center and produced strong sparks at each ignition lead. The examination report notes that the spark plugs exhibited normal operating signatures and the induction system was free of obstructions. No discrepancies were found with the fuel pump. Disassembly of the carburetor revealed that the clip which secures the accelerator pump plunger to its actuation shaft was missing and the pump was inoperative.

The throttle cable was examined in detail. The cable housing/actuating shaft at the carburetor end was found separated from the cable sheath, exposing the unsupported inside cable. A piece of welding rod was found bent around the housing end and taped to the sheath. The cable was removed from the aircraft and subjected to a series of operational tests. For the tests, the cable was supported by hand at each housing end and then the cockpit end was actuated, with no resistance on the carburetor end. In both push and pull directions, the carburetor end was observed to move intermittently. On some occasions, the carburetor end would move an amount corresponding to the cockpit end input; however, at other times, the carburetor end would only move slightly if at all.

The pilot sustained fatal injuries in the accident and an autopsy was conducted by the Tuolumne County Sheriff/Coroner with specimens retained for toxicological analysis. The results of the toxicological tests were negative for alcohol and all screened drug substances.

Pilot Information

Certificate:	Private	**Age:**	64,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	Class 3 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	August 26, 1994
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	1286 hours (Total, all aircraft), 15 hours (Total, this make and model), 6 hours (Last 90 days, all aircraft), 1 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	POWELL	**Registration:**	N59LP
Model/Series:	GLASAIR GLASAIR	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	Yes
Airworthiness Certificate:	Experimental (Special)	**Serial Number:**	156
Landing Gear Type:	Tricycle	**Seats:**	
Date/Type of Last Inspection:	April 2, 1996 Annual	**Certified Max Gross Wt.:**	
Time Since Last Inspection:	1 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	1656 Hrs	**Engine Manufacturer:**	Lycoming
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	O-360-A1G
Registered Owner:	BOBBY HOCKETT & WALTER MAAS	**Rated Power:**	180 Horsepower
Operator:	BOBBY A. HOCKETT	**Operating Certificate(s) Held:**	None
Operator Does Business As:		**Operator Designator Code:**	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:		**Distance from Accident Site:**	
Observation Time:		**Direction from Accident Site:**	
Lowest Cloud Condition:	Clear	**Visibility**	15 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	/	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	0°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:		**Temperature/Dew Point:**	17°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	(Q68)	**Type of Flight Plan Filed:**	None
Destination:		**Type of Clearance:**	None
Departure Time:	10:54 Local	**Type of Airspace:**	Class E

Airport Information

Airport:	PINE MOUNTAIN LAKE Q68	**Runway Surface Type:**	Asphalt
Airport Elevation:	2930 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	27	**IFR Approach:**	None
Runway Length/Width:	3625 ft / 50 ft	**VFR Approach/Landing:**	Precautionary landing;Traffic pattern

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Fatal	**Latitude, Longitude:**	37.849895,-120.01091(est)

Administrative Information

Investigator In Charge (IIC):	Rich, Jeff
Additional Participating Persons:	JIM MURRY; FRESNO , CA MARK W PLATT; WILLIAMSPORT , PA
Original Publish Date:	February 1, 1997
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=29405