



# Aviation Investigation Final Report

<b>Location:</b>	La Verne, California	<b>Accident Number:</b>	WPR18FA279
<b>Date &amp; Time:</b>	September 29, 2018, 18:00 Local	<b>Registration:</b>	N46321
<b>Aircraft:</b>	Cessna 177RG	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Loss of control in flight	<b>Injuries:</b>	1 Fatal, 1 Serious
<b>Flight Conducted Under:</b>	Part 91: General aviation - Personal		

## Analysis

The pilot and passenger were departing the airport; a witness stated that he heard backfiring during the airplane's takeoff roll. He then observed the airplane become airborne and the landing gear start to retract. About 1 minute 30 seconds after the pilot received take off clearance, the pilot requested a return to the airport due to an engine problem. The air traffic controller cleared the pilot to land on runway 8L, and the pilot subsequently initiated a right turn. The witness then observed the airplane descend to the ground in a nose-low attitude. It is likely that, while returning to the airport after takeoff, the pilot failed to maintain the proper airspeed, which resulted in the exceedance of the airplane's critical angle of attack and the airplane experienced an aerodynamic stall.

Examination of the airframe and engine did not reveal any anomalies that would have precluded normal operation and the cause of the engine problem, as reported by the pilot, could not be determined.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

The pilot's failure to maintain adequate airspeed and the exceedance of the airplane's critical angle of attack during a turn, which resulted in an aerodynamic stall and subsequent loss of control. Contributing to the accident was an undetermined engine anomaly.

## Findings

<b>Personnel issues</b>	Aircraft control - Pilot
<b>Aircraft</b>	Angle of attack - Not attained/maintained
<b>Aircraft</b>	Airspeed - Not attained/maintained
<b>Not determined</b>	(general) - Unknown/Not determined

# Factual Information

## History of Flight

Takeoff	Aerodynamic stall/spin
Takeoff	Loss of control in flight (Defining event)
Takeoff	Collision with terr/obj (non-CFIT)

On September 30, 2018, about 1800 Pacific daylight time, a Cessna 177RG airplane, N46321, was substantially damaged when it was involved in an accident near La Verne, California. The pilot was fatally injured, and the pilot-rated passenger was seriously injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

According to the pilot-rated passenger, this was her first flight in the accident airplane. She was seated in the left front seat as the pilot had requested that he sit in the right seat. She recalled that the pilot wanted to obtain the automatic terminal information service (ATIS) information and weather at the airport before departure from Brackett Field Airport (POC). She also reported watching her husband depart immediately ahead of them in his airplane. The pilot-rated passenger could not recall other details of the flight.

About 1 year after the accident, the pilot-rated passenger made a statement to a friend where she stated during the takeoff, the airplane was shaking so bad, she wanted to take the controls but the pilot said he had it.

A review of air traffic control audio and radar recordings provided by the Federal Aviation Administration (FAA) showed that the airplane taxied from the self-service fuel station, turned right onto taxiway S, then proceeded to the runup area near the approach end for runway 26L. The airplane made a 360° turn at the runup area and parked facing the runway. The pilot then contacted the tower controller and requested clearance for takeoff and left closed traffic. The tower controller granted takeoff clearance and left closed traffic. The airplane then taxied onto runway 26L and started its departure. A witness at the airport said that, as the airplane was on the takeoff roll, he heard backfiring coming from the airplane and that it was "real loud, like firecrackers." He reported that the airplane continued the takeoff and the landing gear was retracted. About 1 minute 30 seconds after the takeoff clearance was granted, the pilot requested a return to the airport due to an engine problem. After crossing the departure end of runway 26L, the airplane turned right towards runway 8L. The last radar return showed the airplane at a ground speed of 57 knots, and a heading 353°. The witness reported that the airplane descended in a steep nose-down attitude until it went out of sight. Radar data showed that the airplane climbed to a maximum altitude of about 50 to 75 ft agl. (see Figure 1).



Figure 1.- Flight Data

## Pilot Information

<b>Certificate:</b>	Commercial; Flight instructor	<b>Age:</b>	69, Male
<b>Airplane Rating(s):</b>	Single-engine land; Multi-engine land	<b>Seat Occupied:</b>	Right
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	4-point
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	Yes
<b>Instructor Rating(s):</b>	Airplane single-engine; Instrument airplane	<b>Toxicology Performed:</b>	Yes
<b>Medical Certification:</b>	Class 2 With waivers/limitations	<b>Last FAA Medical Exam:</b>	May 30, 2018
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	(Estimated) 3200 hours (Total, all aircraft), 2995.8 hours (Total, this make and model), 45 hours (Last 90 days, all aircraft)		

## Pilot Information

<b>Certificate:</b>	Airline transport; Flight instructor	<b>Age:</b>	38,Female
<b>Airplane Rating(s):</b>	Single-engine land; Multi-engine land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	4-point
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	Yes
<b>Instructor Rating(s):</b>	Airplane multi-engine; Airplane single-engine	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 1 With waivers/limitations	<b>Last FAA Medical Exam:</b>	
<b>Occupational Pilot:</b>		<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	1650 hours (Total, all aircraft), 20 hours (Last 90 days, all aircraft)		

Narrative personal information place holder

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Cessna	<b>Registration:</b>	N46321
<b>Model/Series:</b>	177RG No Series	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>	1977	<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	177RG1129
<b>Landing Gear Type:</b>	Retractable - Tricycle	<b>Seats:</b>	4
<b>Date/Type of Last Inspection:</b>	November 21, 2017 Annual	<b>Certified Max Gross Wt.:</b>	2800 lbs
<b>Time Since Last Inspection:</b>	15 Hrs	<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	2101.2 Hrs	<b>Engine Manufacturer:</b>	Lycoming
<b>ELT:</b>	C126 installed, activated, did not aid in locating accident	<b>Engine Model/Series:</b>	IO-360-A1B6D
<b>Registered Owner:</b>		<b>Rated Power:</b>	200 Horsepower
<b>Operator:</b>	On file	<b>Operating Certificate(s) Held:</b>	None

Narrative aircraft info place holder

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	KPOC,1014 ft msl	<b>Distance from Accident Site:</b>	1 Nautical Miles
<b>Observation Time:</b>	01:47 Local	<b>Direction from Accident Site:</b>	104°
<b>Lowest Cloud Condition:</b>	Clear	<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>	Broken / 8000 ft AGL	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	9 knots /	<b>Turbulence Type Forecast/Actual:</b>	None / None
<b>Wind Direction:</b>	250°	<b>Turbulence Severity Forecast/Actual:</b>	N/A / N/A
<b>Altimeter Setting:</b>	29.86 inches Hg	<b>Temperature/Dew Point:</b>	26°C / 9°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	La Verne, CA (KPOC)	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>	La Verne, CA (KPOC)	<b>Type of Clearance:</b>	VFR
<b>Departure Time:</b>	17:50 Local	<b>Type of Airspace:</b>	Class D

Narrative meteorological information place holder

## Airport Information

<b>Airport:</b>	Brackett Field Airport KPOC	<b>Runway Surface Type:</b>	Asphalt
<b>Airport Elevation:</b>	1014 ft msl	<b>Runway Surface Condition:</b>	Dry
<b>Runway Used:</b>	26L	<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>	4840 ft / 75 ft	<b>VFR Approach/Landing:</b>	None

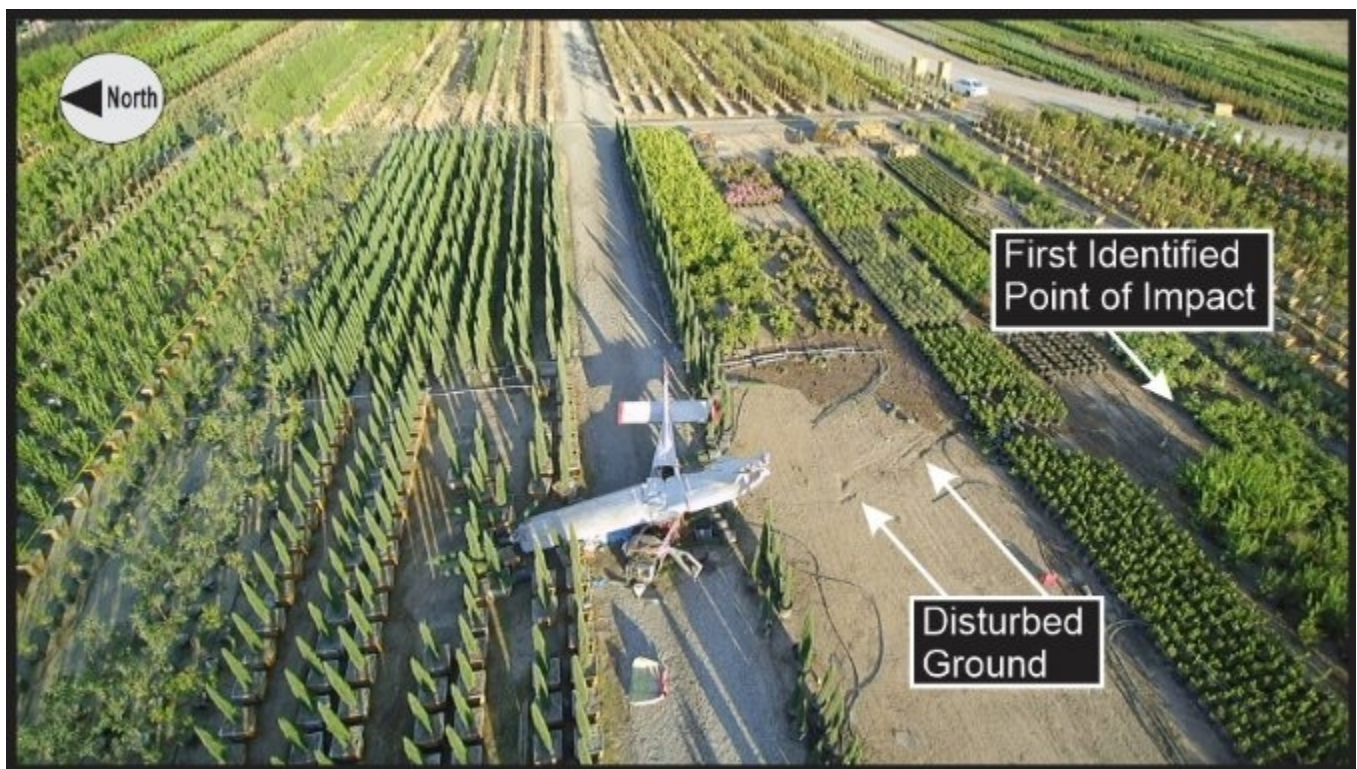
Narrative airport information place holder



## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 Fatal, 1 Serious	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>		<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	1 Fatal, 1 Serious	<b>Latitude, Longitude:</b>	34.093334,-117.791664

The accident site was located about a tenth of a mile from the departure end of runway 26L. Examination of the accident site revealed that the airplane impacted level terrain on the airport property at an elevation of 955 ft mean sea level (msl) that was used as a plant nursery. The debris field was about 40 ft wide and about 70 ft long and was oriented on a heading of about 353° magnetic. The airplane was oriented on a magnetic heading of about 265° magnetic. The first identified point of impact was a small area of disturbed ground of about 24 inches by 12 inches. A portion of the left wing-tip cap was found nearby. About 40 ft from the first identified point of impact and heading towards the airplane was a series of disturbed ground and cut water irrigation lines. All the control surfaces were found at the accident site. Ground scars were observed extending back from the wreckage about 85 ft on a bearing of about 173°. Numerous small components consisting of composite wing-tip fragments, red navigation light glass, and aluminum fragments were found strewn along the disturbed ground. (See figure 2.)



## *Figure 2. Accident Site*

An examination of the airframe and engine revealed no pre-impact anomalies that would have precluded normal operation. Flight control cable continuity was attained from the rudder and elevator flight control surfaces to the cabin controls. Flight control cable continuity of the ailerons was attained from the ailerons to the instrument panel, where cuts were made during rescue operations. Elevator trim control continuity was attained. The trim actuator was extended about 1.2 inches, consistent with about 5° nose-up trim. The flap handle was found in the 20° position. The flap actuator was at 3 inches, consistent with about 5° extended.

First responders reported a significant amount of fuel leaking from the breached left wing. Approximately one gallon from each wing fuel tank was captured and was subsequently tested negative for water contamination.

According to Brackett Field's records, the most recent fuel purchased was dated the day of the accident, September 30, 2018 at 15:20 for 18.63 gallons. The amount of fuel in the tanks prior to this purchase was unknown.

Examination of the throttle cable revealed the throttle cable shroud was found to have slipped off the retention ball. The throttle cable to carburetor assembly was shipped to the NTSB Materials Laboratory, Washington DC for further examination. The examination revealed that the throttle sheath had detached from the mating ball mount, the surface of the ball mount had light scoring consistent with movement against the mating throttle sheath. Safety wire was observed wrapped around the base of the ball mount. A portion of the safety wire was tucked against the side of the ball mount that mated to the throttle sheath. The end of the throttle sheath that mated to the ball mount was slightly out of round.

## **Additional Information**

---

According to the Owner's Manual for a Cessna 177RG, the stall speed for flaps up, power off, is 66 miles per hour (mph). The stall speed for flaps down, power off, is 57 mph.

## **Injuries to Persons**

---



Narrative injuries to persons place holder

### **Damage to Aircraft**

---

Narrative damage to aircraft place holder

### **Other Damage**

---

Narrative other damage place holder

### **Communications**

---

Narrative communications place holder

### **Flight recorders**

---

Narrative flight recorders place holder

## **Medical and Pathological Information**

---

The County of Los Angeles, Department of Medical Examiner-Coroner, Los Angeles, California, conducted an autopsy on the pilot. The cause of death was listed as "multiple blunt force injuries".

Toxicological testing conducted by the FAA Forensic Science Laboratory revealed amlodipine and carvedilol in the pilot's blood and urine, and pioglitazone in the blood. Amlodipine and carvedilol are blood pressure control medications that are not generally considered impairing. Pioglitazone is used to treat diabetes. The pilot reported that he was using metformin and pioglitazone for diabetes. The pilot's usage of metformin and pioglitazone were within the FAA's acceptable combination of diabetes medication.

## **Fire**

---

Narrative fire place holder

## **Survival Aspects**

---

Narrative survival aspects place holder

## **Tests and Research**

---

Narrative tests and research place holder

## Organizational and Management Information

---

Narrative organizational and management information place holder

## Useful or Effective Investigation Techniques

---

Narrative useful or effective investigation techniques place holder

## Administrative Information

---

<b>Investigator In Charge (IIC):</b>	Salazar, Fabian
--------------------------------------	-----------------

<b>Additional Participating Persons:</b>	Yohannes Gugsu; LAX FSDO; Los Angeles, CA Mark Platt; Lycoming Engines; Phoenix, AZ Peter J Basile; Textron Aviation; Wichita, KS
------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------

<b>Original Publish Date:</b>	November 19, 2020
-------------------------------	-------------------

<b>Investigation Class:</b>	2
-----------------------------	---

<b>Note:</b>	The NTSB traveled to the scene of this accident.
--------------	--------------------------------------------------

<b>Investigation Docket:</b>	<a href="https://data.nts.gov/Docket?ProjectID=98372">https://data.nts.gov/Docket?ProjectID=98372</a>
------------------------------	-------------------------------------------------------------------------------------------------------

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. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).