



# National Transportation Safety Board Aviation Accident Final Report

---

<b>Location:</b>	San Pedro, CA	<b>Accident Number:</b>	WPR16FA065A
<b>Date &amp; Time:</b>	02/05/2016, 1500 PST	<b>Registration:</b>	N9872R
<b>Aircraft:</b>	BEECH M35	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Midair collision	<b>Injuries:</b>	2 Fatal
<b>Flight Conducted Under:</b>	Part 91: General Aviation - Personal		

---

## Analysis

A private pilot and a pilot-rated passenger were on a personal cross-county flight in a Beechcraft M35, and a private pilot was on a local personal flight in a Bellanca 8KCAB when the airplanes collided in mid-air over an ocean harbor. Before the collision, the Beechcraft, a low-wing airplane, was descending from 3,500 ft, and flying in an east-northeast direction. The Bellanca, a high-wing airplane, was flying toward the sun in a west-northwest direction with intermittent radar returns between 3,000 and 3,500 ft.

Radar data showed the tracks of both airplanes converge with the airplanes approaching each other nearly head-on. The last radar return from the Beechcraft, just before the collision, was at 3,300 ft. Following the collision, both airplanes descended, impacted the ocean, and sank.

Postaccident examination of the recovered wreckage of both airplanes revealed no mechanical anomalies that would have precluded normal operation of either airplane. Postaccident examination did not identify any paint transfer marks on the airframe of either airplanes; however, not all the parts of the airplanes were recovered.

Ethanol was found in the tissues of each pilot, however, it is most likely that the ethanol was the result of post mortem production. Diphenhydramine, which can cause drowsiness and slow psychomotor reaction time, was detected in the Bellanca pilot's tissue; however, the lack of a blood sample precluded determination of the level of the drug present, and it could not be determined whether the Bellanca pilot was impaired by the effects of diphenhydramine.

All three pilots had a limitation on their Federal Aviation Administration medical certificates for eyeglasses; but two, the Beech pilot-rated passenger and the Bellanca pilot, only required them for near vision, which was not a factor in this accident. The Bellanca pilot had had cataract surgery on both eyes more than a year before the accident; this would be expected to significantly improve her vision and, therefore, likely did not contribute to the accident. Overall, it is unlikely that any problem with distant vision in any of the three pilots contributed to the accident.

It could not be determined why the Beechcraft pilot did not see the Bellanca. The Bellanca pilot was flying toward the sun, and sun glare could have contributed to her inability to see the approaching Beechcraft.

## Probable Cause and Findings

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

The failure of the pilots of both airplanes to see and avoid each other as they converged nearly head-on, which resulted in a midair collision. Contributing to the accident was the effect of sun glare on the other pilot.

### Findings

<b>Personnel issues</b>	Monitoring other aircraft - Pilot (Cause) Monitoring other aircraft - Pilot of other aircraft (Cause)
<b>Environmental issues</b>	Glare - Effect on personnel (Factor) Glare - Effect on operation (Factor)

## Factual Information

### History of Flight

Maneuvering

Midair collision (Defining event)

On February 5, 2016, about 1500 Pacific standard time, a Beechcraft M35 airplane, N9872R, and a Bellanca 8KCAB airplane, N5057G, collided over the Los Angeles Harbor about 2 miles south of Angels Gate Lighthouse, San Pedro, California. The Beechcraft was owned and operated by a private pilot. The private pilot and pilot-rated passenger onboard the Beechcraft, and the private pilot onboard the Bellanca were fatally injured. Both airplanes were substantially damaged. The Beechcraft and the Bellanca were registered to and operated by their respective pilots. Both personal flights were operated in accordance with Title 14 *Code of Federal Regulations* Part 91. Visual meteorological conditions prevailed at the time of the accident, and no flight plans had been filed for either flight. The Beechcraft Departed Camarillo Airport (CMA), Camarillo, California, at an unknown time, and was destined for Zamperini Field Airport (TOA), Torrance, California. The Bellanca departed TOA about 1430 for a local area flight.

According to the Federal Aviation Administration (FAA), the Beechcraft received flight following from air traffic control until 7 miles northwest of Santa Monica Airport (SMO), Santa Monica, California, at which point radar services were terminated in preparation for the airplane to pass through the Special Flight Rules (SFRA), commonly referred to as the visual flight rules (VFR) corridor, over Los Angeles International Airport (LAX), Los Angeles, California. Pilots traveling south through the VFR corridor are expected to maintain 3,500 ft. and use a special frequency to exchange position information with other pilots passing through the corridor.

A review of the radar data showed that the Beechcraft traveled on a southeast heading from CMA along the coastline and through the SFRA over LAX. Once through the SFRA, the Beechcraft continued southbound until it passed over Rancho Palos Verde, at which point, it made a turn to the east over the ocean near San Pedro at an altitude of about 3,500 ft. The low-wing Beechcraft was on an east-northeast heading and in a descent at the time of the collision. The last radar return received before the collision showed the Beechcraft at 3,300 ft.

The radar data showed that the Bellanca, departed from TOA on a VFR local area flight about 1430. The pilot flew south toward the coastline, and then generally flew over the ocean south of San Pedro. The airplane's transponder operated intermittently on a 1200 code and reported altitudes between 3,000 and 3,500 ft. Primary radar returns showed that the high-wing Bellanca was on a west-northwest heading at the time of the collision. The radar showed that the tracks of the two airplanes converged with the airplanes approaching each other at a shallow angle that was nearly head-on (see Figure 1.)

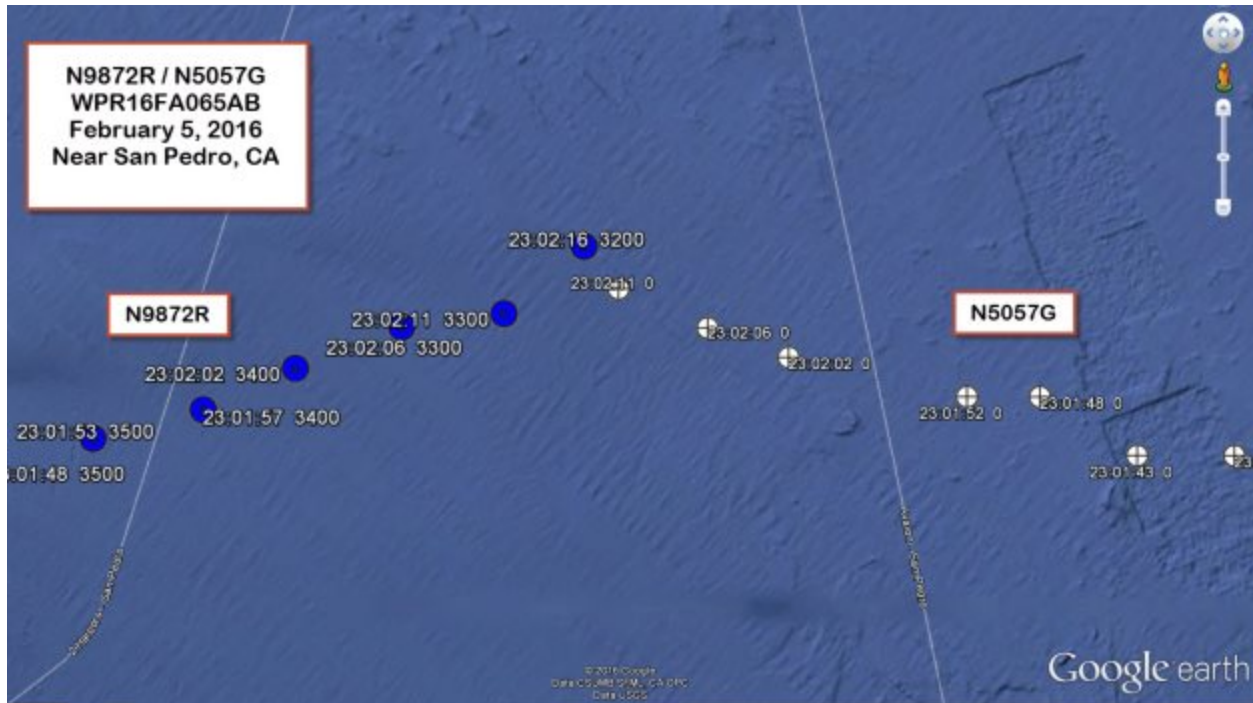


Figure 1. Radar tracks of Beechcraft (blue dots, transponder operating) and Bellanca (white dots, transponder not operating) approaching the collision.

After the collision, primary radar returns showed the Beechcraft continued in a northeast direction for about 27 seconds before it impacted the water, and the Bellanca made a descending left turn toward the southwest and impacted the water at a local time of 1501.

A pilot conducting flight training in the area, overheard on frequency 121.95, a female pilot transmit '57G we're in trouble here.' The pilot attempted to ascertain the female pilots' location, but the response received by the accident pilot was 'help.' The pilot stated that he had been flying in the area for about an hour, and traffic in the area was light; he did not recall hearing any radio calls from either the Bellanca or the Beechcraft prior to the radio calls requesting help.

A witness was on his boat and standing just inside the cabin when he heard a loud buzz over his boat. He turned around and saw a red and white airplane crash into the water about 100 ft directly north of his boat. The airplane struck the ocean at a high rate of speed and at a 90° angle. After notifying the United States Coast Guard, he traveled to the site and reported that there was no sign of an airplane.

Another witness, was standing at the stern of his boat looking back toward the mainland. He saw an airplane in a nose dive and watched it crash into the ocean. The witness turned slightly to his right and caught view of a second airplane crashing into the ocean.

## Pilot Information

<b>Certificate:</b>	Private	<b>Age:</b>	61, Male
<b>Airplane Rating(s):</b>	Single-engine Land	<b>Seat Occupied:</b>	Unknown
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	Unknown
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	Yes
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	Yes
<b>Medical Certification:</b>	Class 3 With Waivers/Limitations	<b>Last FAA Medical Exam:</b>	04/02/2015
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	(Estimated) 1186 hours (Total, all aircraft)		

## Pilot-Rated Passenger Information

<b>Certificate:</b>	Commercial	<b>Age:</b>	80, Male
<b>Airplane Rating(s):</b>	Multi-engine Land; Single-engine Land	<b>Seat Occupied:</b>	Unknown
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	Yes
<b>Instructor Rating(s):</b>	Airplane Multi-engine; Airplane Single-engine; Instrument Airplane	<b>Toxicology Performed:</b>	Yes
<b>Medical Certification:</b>	Class 3 With Waivers/Limitations	<b>Last FAA Medical Exam:</b>	11/17/2015
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	(Estimated) 2394 hours (Total, all aircraft)		

### Beechcraft Pilot/Owner

The pilot, age 61, held a private pilot certificate with airplane single-engine land and instrument airplane ratings. His third-class medical certificate was issued on April 02, 2015, with limitation that the pilot must wear corrective lenses. The pilot's logbook was not recovered for examination. A review of the pilot's most recent medical application indicated that he had a total of 1,186 flight hours with 19.4 hours in the past 6 months.

### Beechcraft Pilot-Rated Passenger

The pilot-rated passenger, age 80, held a commercial pilot certificate with ratings for airplane single- and multi-engine land and instrument airplane. He also held a flight instructor certificate with ratings for airplane single- and multi-engine land and instrument airplane; his flight instructor rating expired March 31, 2017. His third-class medical certificate was issued on November 17, 2015, with the limitation that the pilot must have available glasses for near vision. The pilot's logbook was not recovered for examination. A review of the pilot's most recent medical application indicated that he had a total of 2,394 flight hours with 16.7 hours in

the past 6 months.

#### Bellanca Pilot/Owner

The pilot, age 72, held a private pilot certificate with an airplane single-engine land rating. Her third-class medical certificate was issued on May 18, 2015, with the limitation that the pilot must have available glasses for near vision. The pilot had had cataract surgery on both eyes more than a year prior to the accident. The pilot's logbook was not recovered for examination. A review of the pilot's most recent medical application indicated that she had a total of 1,034 flight hours with 6 hours in the past 6 months.

#### Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	BEECH	<b>Registration:</b>	N9872R
<b>Model/Series:</b>	M35 NO SERIES	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>	1960	<b>Amateur Built:</b>	No
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	D-6425
<b>Landing Gear Type:</b>	Retractable - Tricycle	<b>Seats:</b>	
<b>Date/Type of Last Inspection:</b>	05/01/2014, Annual	<b>Certified Max Gross Wt.:</b>	2952 lbs
<b>Time Since Last Inspection:</b>		<b>Engines:</b>	Reciprocating
<b>Airframe Total Time:</b>	4723.33 Hours as of last inspection	<b>Engine Manufacturer:</b>	Continental Motors Inc.
<b>ELT:</b>	Installed	<b>Engine Model/Series:</b>	IO-470-C8B
<b>Registered Owner:</b>	On file	<b>Rated Power:</b>	
<b>Operator:</b>	On file	<b>Operating Certificate(s) Held:</b>	None

#### Beechcraft

The Beechcraft was a low-wing airplane that was painted red and white. The airplane had a red undercarriage, and a white nose/cowling section along with the top portion of the airplane.

#### Bellanca

The Bellanca was a high-wing airplane that was painted red, white, and blue. The airplane had a white undercarriage, with blue and white striping on the underside of both wings; with the top portion from the engine to the tail painted red. The underside of the wings was red, and the top was white and blue. The tail section was a red/white combination.

## Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	KTOA, 97 ft msl	Distance from Accident Site:	4 Nautical Miles
Observation Time:	1447 PST	Direction from Accident Site:	76°
Lowest Cloud Condition:	Clear	Visibility	10 Miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	Light and Variable /	Turbulence Type Forecast/Actual:	/
Wind Direction:	Variable	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.25 inches Hg	Temperature/Dew Point:	24° C / 0° C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	CAMARILLO, CA (CMA)	Type of Flight Plan Filed:	None
Destination:	TORRANCE, CA (TOA)	Type of Clearance:	VFR Flight Following
Departure Time:	PST	Type of Airspace:	

## Airport Information

Airport:	Zamperini Field (TOA)	Runway Surface Type:	
Airport Elevation:	103 ft	Runway Surface Condition:	Unknown
Runway Used:	N/A	IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	Unknown

## Wreckage and Impact Information

Crew Injuries:	2 Fatal	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 Fatal	Latitude, Longitude:	33.785278, -118.423611 (est)

The Bellanca, at the time of the accident was flying toward the sun. According to the United States Naval Observatory Astronomical Applications Department, sunset was at 1728.

After the mid-air collision, both airplanes impacted the water and sank. Multiple search and

rescue agencies responded to the area, and the wreckage of the Beechcraft was located at a depth of 88-foot sea water (fsw) and recovered by the Los Angeles Sheriff's Department Special Enforcement Bureau's Dive Team on February 7, 2016. They continued the search for the Bellanca, and recovered the wreckage on February 9, 2016; the Bellanca was at a depth of 110 fsw.

According to the recovery divers all 3 pilots remained in their respective airplanes.

## Medical And Pathological Information

---

The County of Los Angeles, Department of Medical Examiner-Coroner conducted postmortem examinations of all three pilots. The cause of death for all three pilots was reported as multiple blunt force trauma, and the manner of death was accident.

The FAA's Bioaeronautical Sciences Research Laboratory, Oklahoma City, Oklahoma, performed forensic toxicology on specimens from all three pilots. Carbon monoxide and cyanide testing was not performed. The results were as follows.

### Beechcraft Pilot/Owner

Ethanol was detected in muscle tissue at 61 (mg/dL, mg/hg), and in lung tissue at 30 (mg/dL, mg/hg); putrefaction of the specimens was identified. Tested drugs yielded negative results.

### Beechcraft Pilot-Rate Passenger

Ethanol was detected in muscle tissue at 75 (mg/dL, mg/hg), no ethanol was detected in liver tissue, and putrefaction of the specimens was identified. Atorvastatin a non-impairing cholesterol lower drug, was detected in liver and kidney tissues.

### Bellanca Pilot

Carbon monoxide and cyanide tester were not performed. Ethanol was detected in muscle tissue at 30 (mg/dL, mg/hg) and in liver tissue at 14 (mg/dL, mg/hg); putrefaction of the specimens was identified. Diphenhydramine, a sedating antihistamine, was detected in liver and kidney tissues.

## Tests And Research

---

An examination of both airplanes was performed on March 15, 2016, at Plain Parts in Pleasant Grove, California. There was no evidence found of any preimpact anomalies of either airplane that would have precluded normal operation. No paint transfer witness marks were identified on either airplane.



## Beechcraft

During the airplane examination, the outer 5-6 feet of the left aileron and wing, and the left stabilizer were missing from the Beechcraft and not recovered. The main landing gear remained attached to the wings. The left main landing gear had a deep cut through the tire. The nose landing gear was missing and not recovered. The pushrods, intake manifold, and exhaust tubes separated from the left side of the engine and were not recovered.

The propeller for the Beechcraft remained attached to the engine. Both propeller blades had leading edge gouges and significant bending; one blade was bent forward. Neither propeller blade could be rotated in the hub.

A hand-held portable GPS device recovered from the Beechcraft was shipped to the NTSB's Vehicle Recorder Division in Washington, DC, for further examination. An external examination of the unit revealed water and impact damage. The GPS unit was disassembled, and the data chip was removed and read out. One track log was extracted dated December 31, 1989, which was not consistent with the accident flight.

## Bellanca

During the airplane examination approximately 9 feet of the outboard section of the left wing was missing and not recovered. There was also significant indentation of the leading edge of the left horizontal stabilizer.

The propeller for the Bellanca remained attached to the engine. Both blades exhibited aft bending, with no scratches or impact marks identified.

## Additional Information

---

According to the FAA's VFR aeronautical sectional chart for the area that the accident occurred, there is an applicable note outlined in magenta for the area. It's a CAUTION note that identified the area as intensive flight training and indicated radio frequencies to be used by aircraft to establish two-radio communication before entering the class C airspace. The radio frequencies are a best practice for pilots training in those areas, as well as for en route pilots transitioning through the airspace. (See Figure 2)



Figure 2 – FAA Intensive Flight Training area identified and radio frequencies to monitor.

Regarding collision avoidance, the FAA Airplane Flying Handbook states,

"All pilots must be alert to the potential for midair collision and near midair collisions... this concept requires that vigilance shall be maintained at all times, by each person operating an aircraft regardless of whether the operation is conducted under instrument flight rules (IFR) or visual flight rules (VFR)... most midair collision accident and reported near midair collision incidents occur in good VFR weather conditions and during the hours of daylight. Most of these accident/incidents occur within 5 miles of an airport and/or near navigation aids."

The NTSB has released two safety alerts that address midair collisions and prevention:

SA-045: See and Be Seen: Your life Depends On It

SA-058: Prevent Midair Collisions: Don't Depend on Vision Alone

### Administrative Information

Investigator In Charge (IIC):	Tealeye Cornejo	Report Date:	04/09/2018
Additional Participating Persons:	Josef E Babati; Federal Aviation Administration; Long Beach, CA Jon Hirsch; Textron Aviation; Wichita, KS		
Publish Date:	04/09/2018		
Note:	The NTSB traveled to the scene of this accident.		
Investigation Docket:	<a href="http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=92690">http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=92690</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](#).