		NTSB ID: LAX96FA114		Aircraft Registration Number: N2596Z	
		Occurrence Date: 02/17/1996		Most Critical Injury: Fatal	
		Occurrence Type: Accident		Investigated By: NTSB	
Location/Time					
Nearest City/Place NEW RIVER		State AZ	Zip Code 85027	Local Time 1715	Time Zone MST
Airport Proximity: Off Airport/Airstrip		Distance From Landing Facility:		Direction From Airport:	
Aircraft Information Summary					
Aircraft Manufacturer Bellanca		Model/Series 8KCAB		Type of Aircraft Airplane	
Sightseeing Flight: No			Air Medical Transport Flight: No		
Narrative					
Brief narrative statement of facts, conditions and circumstances pertinent to the accident/incident:					
HISTORY OF FLIGHT					
<p>On February 17, 1996, about 1715 hours mountain standard time, a Bellanca 8KCAB, N2596Z, collided with flat desert terrain while maneuvering near an aerobatics practice area west of New River, Arizona. The aircraft was destroyed and the pilot received fatal injuries. The aircraft was operated by Glendale Aviation and rented to the pilot for the personal flight. The flight originated in Glendale, Arizona, at 1645 on the day of the accident. Visual meteorological conditions prevailed at the time and no flight plan had been filed.</p>					
<p>After renting the aircraft, the pilot obtained an emergency parachute and told the operator that he intended to fly to the designated aerobatics practice area to practice maneuvers. He asked several people in the immediate area if they would like to go on the flight, but no one had the time available. The operator said that he expected the pilot to return in about 1 hour, which had been his custom over the past several months. There were no known eyewitnesses to the accident.</p>					
<p>About 0830 on the morning following the accident, the aircraft's wreckage was accidentally found by a hiker. Sheriff's deputies who responded to the scene reported that the accident site was in an uninhabited desert area, which was located about 4.5 miles southwest of the junction of Interstate 17 and New River Road. The site can be located on a chart at 33 degrees 39 minutes north latitude and 112 degrees 11 minutes west longitude. Ground elevation at the accident site was estimated to be about 1,700 to 1,800 feet msl.</p>					
PILOT INFORMATION					
<p>The pilot's flight instructor reported he flew with the pilot about 12 to 14 hours during a course of aerobatic instruction. He thought he administered the pilot a biannual flight review in the same make and model aircraft. He said he was not sure of the hours and dates since he was not able to refer to his logbook while making a statement.</p>					
<p>During the periods in which he gave the pilot aerobatic instruction, he recalled that the pilot always demonstrated a conservative approach to flying. He told Safety Board investigators that he had previously flown with the pilot in the vicinity of the accident site and that he told the pilot about the higher terrain elevation in that area on more than one occasion. He believed that on the day of the accident, the pilot was aware of the higher terrain elevation.</p>					
<p>The pilot was in the process of having a video produced which was to illustrate his aerobatics experiences. The first recording session began on February 5, 1996, and was concluded on February 8, 1996. This session was conducted by a cinematographer seated in the rear of the aircraft. The final phase of recording was scheduled to begin within the next few days using a ground positioned video camera. Safety Board investigators viewed an edited copy of the previous recording.</p>					
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AVIATION

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Occurrence Type: Accident

Narrative (Continued)

In the earlier recording, which was conducted over the aerobatics practice area, the camera was positioned to the right side of the pilot's head just above shoulder level. This perspective gave watchers a simultaneous view of the maneuvers and the aircraft instrument panel. In this session the pilot performed a series of rolls, loops, and spins that he generally entered from an altitude of between 2,000 and 2,500 feet msl. The maneuvers were completed with altitude losses ranging from about 200 to 400 feet. The pilot climbed back to the entry altitude before initiating another maneuver. The ground elevation at the aerobatics practice area is about 1,500 feet msl.

AIRCRAFT INFORMATION

According to Federal Air Regulation 23.337, aerobatic aircraft, at a minimum, must accommodate g-loads ranging from +6 to -3 g's. This aircraft was designed to accommodate aerodynamic loads ranging from +6 to -5 g's. The aircraft's instrument panel was equipped with a g-meter which displays and records the highest positive and negative g forces the aircraft experiences. Those values are shown on the face of the instrument until the meter is manually reset.

The operator reported that the aircraft had been refueled with 3 gallons of aviation fuel prior to departure which brought the total fuel onboard to 18 gallons. The fuel selector handle was found positioned on both. Considering a fuel consumption rate of about 10 gph, Safety Board investigators estimated that about 13 gallons were onboard at the time of the accident.

According to the rental agreement, the engine tachometer read 851.88 hours on departure from Glendale airport. It read 852.17 hours when it was found at the accident site.

WRECKAGE AND IMPACT INFORMATION

The aircraft crashed on level dry desert terrain on a heading of 034 degrees. The initial impact site and a freshly cut limb on a 5-foot cactus were identified during an inspection of the site. The angle formed by a line connecting those points and the horizon measured 30 degrees. The wreckage was distributed from the initial impact point along the heading of 034 degrees for a distance of 345 feet. The wreckage path measured 33 feet wide and the main wreckage was found at the opposite end of the wreckage distribution.

There was no evidence of an in-flight breakup as all aerodynamic structures and associated flight control surfaces were found at the accident site. An examination of those flight controls and cables was conducted; however, due to the numerous breaks in the control cables it was not possible to establish control continuity. All breaks in the control cables exhibited a similar splayed appearance. There was no evidence found indicating previous control sticking, chafing, or binding.

The airframe overall exhibited evidence of crush, collapse, and multiple overload fractures. No major structural component remained intact, including the empennage and all tail surfaces. The propeller was found to have separated from the engine at the propeller flange. It was located about 160 feet beyond the initial impact point in the final direction of flight. One blade was bent and curled aft about midspan and exhibited a series of leading edge gouges. The opposite blade was bent aft near the blade root. The second blade also displayed some torsional twisting and leading edge gouges.

Heavier, compact mechanical components, such as the oil sump, the magnetos, the starter, the generator, and the fuel injector, separated from the engine and airframe. Components such as these were found at various points throughout the forward third of the wreckage distribution area. The engine broke free from its mounting points and was found about 305 feet beyond the impact point. The cylinders remained attached to the engine case, but their top and bottom cooling fins exhibited evidence of crush and deformation.

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Occurrence Type: Accident

Narrative (Continued)

The engine was reexamined after being recovered from the accident site. The No. 1 cylinder intake and exhaust push rod tubes were bent. The fuel line to the No. 1 cylinder was separated and the No. 3 cylinder intake push rod tube was bent. The intake and exhaust manifolds for all four cylinders separated from the engine.

The rocker box covers were removed and the crankshaft was moved slightly by hand, confirming valve train continuity in all four cylinders. Continuity through the accessory gear section was also established.

Both magnetos were hand rotated and both produced sparks at all four posts.

The pilot's seat was equipped with a 5-point restraint system and the pilot wore an emergency parachute. The restrain system was found separated from the airframe, exhibiting numerous rips and tears. Its latching mechanism was found outside the aircraft, separated from the lap and shoulder belts, as well as the crotch strap. The parachute had not been deployed, the safeties on the quick release cabin door were in place and the door had not been jettisoned.

The emergency locator transmitter (ELT) arming switch was destroyed and the coaxial antenna cable separated between the unit and its external antenna. No ELT signals were reported in the vicinity of New River from the estimated time of the accident until the accident site was located about 0830 the following morning.


MEDICAL AND PATHOLOGICAL INFORMATION


On February 19, 1996, an autopsy was performed by the Maricopa County Office of the Medical Examiner. The autopsy results revealed evidence of pre-existing atherosclerotic cardiovascular disease. The attending pathologist reported the left anterior descending coronary exhibited a 50 percent occlusion while the left circumflex coronary artery was found to be 30 percent occluded.

Toxicological samples were collected and sent to the Civil Aero Medical Institute (CAMI) for further analysis. Upon their arrival the samples were screened for carbon monoxide, cyanide, volatiles, and drugs. The manager of the CAMI toxicology and accident research laboratory reported negative findings for all substances screened except for Salicylate (an analgesic). The toxicological report is appended to this report.

ADDITIONAL INFORMATION

The aircraft wreckage was recovered by Air Transport and transported to their storage facility in Phoenix, Arizona. The wreckage was released to a representative of the registered owners on October 10, 1996. A copy of the release is appended to this report.

 National Transportation Safety Board FACTUAL REPORT AVIATION		NTSB ID: LAX96FA114			
		Occurrence Date: 02/17/1996			
		Occurrence Type: Accident			
Landing Facility/Approach Information					
Airport Name	Airport ID:	Airport Elevation Ft. MSL	Runway Used 0	Runway Length	Runway Width
Runway Surface Type:					
Runway Surface Condition:					
Type Instrument Approach: NONE					
VFR Approach/Landing: None					
Aircraft Information					
Aircraft Manufacturer Bellanca		Model/Series 8KCAB		Serial Number 351-77	
Airworthiness Certificate(s): Acrobatic					
Landing Gear Type: Tailwheel					
Homebuilt Aircraft? No	Number of Seats: 2	Certified Max Gross Wt. 1800 LBS	Number of Engines: 1		
Engine Type: Reciprocating	Engine Manufacturer: Lycoming	Model/Series: AEIO-360-H1A	Rated Power: 180 HP		
- Aircraft Inspection Information					
Type of Last Inspection Annual	Date of Last Inspection 04/1995	Time Since Last Inspection 55 Hours	Airframe Total Time 852 Hours		
- Emergency Locator Transmitter (ELT) Information					
ELT Installed? Yes	ELT Operated? No	ELT Aided in Locating Accident Site?			
Owner/Operator Information					
Registered Aircraft Owner MARK WINTON, ET. AL.		Street Address 12332 NORTH 78TH DRIVE			
		City PEORIA	State AZ	Zip Code 85381	
Operator of Aircraft JAKE STARR		Street Address 6841 N. GLEN HARBOR BLVD.			
		City GLENDALE	State AZ	Zip Code 85307	
Operator Does Business As: GLENDALE AVIATION			Operator Designator Code:		
- Type of U.S. Certificate(s) Held: None					
Air Carrier Operating Certificate(s):					
Operating Certificate:			Operator Certificate:		
Regulation Flight Conducted Under: Part 91: General Aviation					
Type of Flight Operation Conducted:					

 <p>National Transportation Safety Board FACTUAL REPORT AVIATION</p>	NTSB ID: LAX96FA114
	Occurrence Date: 02/17/1996
	Occurrence Type: Accident

First Pilot Information

Name On File	City On File	State On File	Date of Birth On File	Age 53
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Sex: M	Seat Occupied: Front	Principal Profession: Retired	Certificate Number: On File
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Certificate(s): Commercial

Airplane Rating(s): Multi-engine Land; Single-engine Land

Rotorcraft/Glider/LTA: None

Instrument Rating(s): Airplane

Instructor Rating(s): None

Type Rating/Endorsement for Accident/Incident Aircraft? No	Current Biennial Flight Review?
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Medical Cert.: Class 2	Medical Cert. Status: Valid Medical--w/ waivers/lim.	Date of Last Medical Exam: 03/1995
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- Flight Time Matrix	All A/C	This Make and Model	Airplane Single Engine	Airplane Multi-Engine	Night	Instrument		Rotorcraft	Glider	Lighter Than Air
						Actual	Simulated			
Total Time	400	30								
Pilot In Command(PIC)	400	30								
Instructor										
Last 90 Days										
Last 30 Days	9									
Last 24 Hours										

Seatbelt Used? Yes	Shoulder Harness Used? Yes	Toxicology Performed? Yes	Second Pilot? No
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Flight Plan/Itinerary

Type of Flight Plan Filed: None

Departure Point GLENDALE	State AZ	Airport Identifier GEU	Departure Time 1645	Time Zone MST
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Destination Local Flight	State	Airport Identifier	
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Type of Clearance: None

Type of Airspace: Class G

Weather Information

Source of Briefing:
No record of briefing

Method of Briefing:

 <p>National Transportation Safety Board FACTUAL REPORT AVIATION</p>	NTSB ID: LAX96FA114
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Weather Information					
WOF ID	Observation Time	Time Zone	WOF Elevation	WOF Distance From Accident Site	Direction From Accident Site
DVT	1645	MST	1476 Ft. MSL	14 NM	340 Deg. Mag.
Sky/Lowest Cloud Condition: Unknown			0 Ft. AGL	Condition of Light: Day	
Lowest Ceiling: Broken		18000 Ft. AGL		Visibility: 5 SM	Altimeter: 29.00 "Hg
Temperature: 26 °C	Dew Point: 2 °C	Wind Direction: 210		Density Altitude: Ft.	
Wind Speed: 5	Gusts:	Weather Conditions at Accident Site: Visual Conditions			
Visibility (RVR): 0 Ft.	Visibility (RVV) 0 SM	Intensity of Precipitation: Unknown			
Restrictions to Visibility: None					
Type of Precipitation: None					

Accident Information		
Aircraft Damage: Destroyed	Aircraft Fire: None	Aircraft Explosion: None

Classification: U.S. Registered/U.S. Soil					
- Injury Summary Matrix	Fatal	Serious	Minor	None	TOTAL
First Pilot	1				1
Second Pilot					
Student Pilot					
Flight Instructor					
Check Pilot					
Flight Engineer					
Cabin Attendants					
Other Crew					
Passengers					
- TOTAL ABOARD -	1				1
Other Ground	0	0	0		0
- GRAND TOTAL -	1	0	0		1

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AVIATION



NTSB ID: LAX96FA114

Occurrence Date: 02/17/1996

Occurrence Type: Accident

Administrative Information

Investigator-In-Charge (IIC)

ROBERT R. CRISPIN

Additional Persons Participating in This Accident/Incident Investigation:

CHARLES L PRINCE
WP-SDL-FSDO
SCOTTSDALE, AZ 85260

GERALD R JAMES
TEXTRON LYCOMING
DALLAS, TX 75248