



# National Transportation Safety Board Aviation Accident Final Report

---

<b>Location:</b>	Justin, TX	<b>Accident Number:</b>	CEN09FA115
<b>Date &amp; Time:</b>	01/03/2009, 1345 CST	<b>Registration:</b>	N99YK
<b>Aircraft:</b>	NANCHANG CHINA CJ-6	<b>Aircraft Damage:</b>	Destroyed
<b>Defining Event:</b>	Aerodynamic stall/spin	<b>Injuries:</b>	2 Fatal
<b>Flight Conducted Under:</b>	Part 91: General Aviation - Personal		

---

## Analysis

After leading a three-ship formation to the destination airport, and while in pattern to land, the lead airplane was observed to be in a very steep right turn that immediately turned to a near vertical nose-down descent. The airplane then impacted terrain in a near vertical nose-down attitude. A postimpact fire consumed portions of the cockpit, fuselage, right aileron, left elevator, rudder, and vertical fin. Prevailing winds were from 40 degrees from runway heading at 10 knots gusting to 19 knots. The investigation could not determine if the wind conditions contributed to the pilot's decision to use a steeper-than-normal bank angle. Federal Aviation Administration Advisory Circular 61-67C informs pilots that accelerated stall can occur at higher-than-normal airspeed if there are abrupt and/or excessive control inputs such as during steep turns. An examination of the engine and airframe did not reveal any preimpact anomalies.

## 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 while maneuvering on approach, which resulted in an accelerated stall and subsequent loss of control.

## Findings

---

<b>Aircraft</b>	Airspeed - Not attained/maintained (Cause) Performance/control parameters - Capability exceeded (Cause)
<b>Personnel issues</b>	Aircraft control - Pilot (Cause)

## Factual Information

### HISTORY OF FLIGHT

On January 3, 2009, approximately 1345 central standard time (CST) a Nanchang China CJ-6, N99YK, was destroyed and consumed by a post crash fire after a loss of control and impact with terrain while on base leg for landing at the Propwash Airport (16X), Justin, Texas. The private pilot and passenger sustained fatal injuries. The aircraft was owned by a corporation, operated by a private individual, and flown in accordance with 14 Code of Federal Regulations (CFR) Part 91. No flight plan was filed for the local area flight. Visual meteorological conditions prevailed at the time of the accident.

The airplane was leading a three-ship formation on a local area pleasure flight. The pilot called the flight and announced an overflight of Propwash airport in loose trail formation conducting a right break to enter the traffic pattern at 3 second intervals for landing on runway 17. The pilot of the second aircraft initiated his break, established on downwind leg, and completed his landing checklist. When he looked outside the cockpit for the lead aircraft's position he noticed lead flying on the base leg approximately 300-400 feet above ground level in a very steep right turn that immediately turned to a near vertical nose down descent. The airplane impacted the ground near vertical and 180 degrees from the intended landing direction. Witnesses on the ground confirmed this same scenario.

### PERSONNEL INFORMATION

The pilot, age 69, held a private pilot certificate for airplane single engine and multi engine land, and instrument airplane. A third class medical certificate was issued on August 27, 2007 with the restriction that glasses must be available for near vision. The pilot's log book was not found prior to the completion of this report. However, on the pilot's last application for a medical certificate the pilot reported accumulating 2,500 total hours with 400 logged in the previous six months.

The passenger, age 61, held a commercial pilot certificate for airplane single engine and multi engine land, and instrument airplane. A second class medical certificate was last issued on July 15, 2005 with no restrictions. In addition, the passenger held a flight instructor certificate for airplane single engine land and instrument airplane.

### AIRCRAFT INFORMATION

The tandem two-seat, dihedral wing, retractable tricycle landing gear airplane, serial number 1332010, was manufactured in 1965. It was powered by a 360-horsepower Vendeneyev M14P radial engine driving a MT MTV-9-B-C three-bladed, variable pitch, metal propeller. The airplane was certified under an experimental exhibition category on November 2, 2006 and reported to have accumulated 4,590 hours.

### METEOROLOGICAL INFORMATION

At 1353, an automated weather reporting station at the Fort Worth Alliance Airport (KAFW), Alliance, Texas, about 7 miles south of the accident site, reported wind from 210 degrees at 10 knots gusting to 19 knots, visibility 10 miles, clear skies, temperature 82 degrees Fahrenheit (F), dew point 48 F, and a barometric pressure of 29.64 inches of Mercury.

### AIRPORT INFORMATION

Propwash Airport (16X) is a privately-owned, non-towered airport located at an elevation of 800 feet mean sea level. Runway 17, the landing runway, was a 3,000 foot long by 60 foot wide asphalt runway.

#### WRECKAGE AND IMPACT INFORMATION

The airplane came to rest in a nearly vertical attitude. The empennage was bent to the right 90 degrees just aft of the wings and was rotated clock-wise 90 degrees. The flight instruments and engine were found just forward and to the left of the cockpit. A post-impact fire consumed portions of the cockpit, fuselage, right aileron, left elevator, rudder, and vertical fin. The landing gear was found extended. The split flap was found extended. Both wings displayed accordion crushing with the right wing displayed a higher degree of damage than the left wing. Control continuity was established from the cockpit area to each of the control surfaces.

#### MEDICAL AND PATHOLOGICAL INFORMATION

An autopsy was performed on the pilot on January 4, 2009, by the Tarrant County Medical Examiner's District, Fort Worth, Texas. The autopsy ruled the cause of death to be from "multiple blunt force injuries" and the manner of death to be an accident.

Forensic toxicology was performed on specimens from the pilot by the FAA Bioaeronautical Sciences Research Laboratory, Oklahoma City, Oklahoma. The toxicology report stated that no carbon monoxide, cyanide, or drugs were detected in blood. No ethanol was detected in vitreous.

#### ADDITIONAL INFORMATION

The FAA Advisory Circulatory (AC) 61-67C, Stall and Spin Awareness Training, dated September 25, 2000, informs pilots that "[a]ccelerated stalls can occur at higher-than-normal airspeeds due to abrupt and/or excessive control applications. These stall may occur in steep turns, pullups, or other abrupt changes in flightpath."

#### History of Flight

Approach-VFR pattern base	Aerodynamic stall/spin (Defining event)
Uncontrolled descent	Collision with terr/obj (non-CFIT)
Post-impact	Fire/smoke (post-impact)

## Pilot Information

<b>Certificate:</b>	Private	<b>Age:</b>	69, Male
<b>Airplane Rating(s):</b>	Multi-engine Land; Single-engine Land	<b>Seat Occupied:</b>	Front
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	Seatbelt, Shoulder harness
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	Yes
<b>Medical Certification:</b>	Class 3 With Waivers/Limitations	<b>Last Medical Exam:</b>	08/27/2007
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	(Estimated) 2500 hours (Total, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Manufacturer:</b>	NANCHANG CHINA	<b>Registration:</b>	N99YK
<b>Model/Series:</b>	CJ-6	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Experimental	<b>Serial Number:</b>	1332010
<b>Landing Gear Type:</b>	Retractable - Tricycle	<b>Seats:</b>	2
<b>Date/Type of Last Inspection:</b>	Unknown	<b>Certified Max Gross Wt.:</b>	
<b>Time Since Last Inspection:</b>		<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>		<b>Engine Manufacturer:</b>	Vendeneyev
<b>ELT:</b>	Not installed	<b>Engine Model/Series:</b>	M14P
<b>Registered Owner:</b>	CENTROL INC	<b>Rated Power:</b>	360 hp
<b>Operator:</b>		<b>Air Carrier Operating Certificate:</b>	None

## Meteorological Information and Flight Plan

Observation Facility, Elevation:	KAFW, 722 ft msl	Observation Time:	1353 CST
Distance from Accident Site:	7 Nautical Miles	Condition of Light:	Day
Direction from Accident Site:	180°	Conditions at Accident Site:	Visual Conditions
Lowest Cloud Condition:	Clear	Temperature/Dew Point:	28° C / 9° C
Lowest Ceiling:	None	Visibility	10 Miles
Wind Speed/Gusts, Direction:	10 knots/ 19 knots, 210°	Visibility (RVR):	
Altimeter Setting:	29.64 inches Hg	Visibility (RVV):	
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Justin, TX (16X)	Type of Flight Plan Filed:	None
Destination:	Justin, TX (16X)	Type of Clearance:	None
Departure Time:	CST	Type of Airspace:	

## Airport Information

Airport:	Propwash Airport (16X)	Runway Surface Type:	
Airport Elevation:	800 ft	Runway Surface Condition:	
Runway Used:	N/A	IFR Approach:	Visual
Runway Length/Width:		VFR Approach/Landing:	Full Stop; Traffic Pattern

## Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Destroyed
Passenger Injuries:	1 Fatal	Aircraft Fire:	On-Ground
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 Fatal		

## Administrative Information

Investigator In Charge (IIC):	William H Gamble	Adopted Date:	04/22/2010
Additional Participating Persons:	Willis Power; Federal Aviation Administration; Fort Worth, TX		
Publish Date:	04/22/2010		
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 <a href="mailto:pubinq@ntsb.gov">pubinq@ntsb.gov</a> , or at 800-877-6799. Dockets released after this date are available at <a href="http://dms.nts.gov/pubdms/">http://dms.nts.gov/pubdms/</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.