National Transportation Safety Board
Aviation Accident Data Summary

Location:	New Braunfels, TX	**Accident Number:**	FTW03LA034
Date & Time:	11/01/2002, 1550 CST	**Registration:**	N77UA
Aircraft:	Rockwell 690B	**Injuries:**	3 None
Flight Conducted Under:	Part 91: General Aviation - Executive/Corporate		

Analysis

The gear in transient light remained illuminated during the initial climb. After recycling the gear and observing the light was still on, the pilot visually checked to ensure that the gear was retracted. After leveling off at 16,000 feet the pilot noticed the ball was not centered and added rudder trim to compensate. Two minutes later the airplane began to yaw and shake violently, followed by an uncommanded roll to the left of about 70 degrees with about a 10 to 15 degree pitch down attitude. The pilot manually disconnected the autopilot and reduced power. After losing 1,000 feet, control of the airplane was regained. Power was added and the airplane climbed back to 16,000 feet. After leveling off the pilot tentatively put pressure on each flight control to assess the problem and stability of the airplane. No adverse reactions to control inputs were noted, with the exception of a slight buffet approaching 200 to 210 knots. Power was then reduced to maintain a cruise speed below 200 knots. During the descent the airplane was slipping badly and the ball was all the way to the right, but the pilot was able to compensate with roll input. After a normal landing the pilot noticed the rudder horn and approximately 18 inches of the trailing rudder had separated from the aircraft. The rear of the fuselage was wrinkled on both sides of the horizontal stabilizer, and the vertical stabilizer was wrinkled. The forward one-half of the left nose gear door was bent aft approximately 90 degrees. A subsequent search for the missing top 18 inches of the trailing rudder proved unsuccessful. The top 24 inches of the remaining rudder was sectioned and sent to the NTSB Materials Laboratory Division, Washington, D.C., for examination. The Senior Metallurgist noted that the fracture surfaces observed were consistent with overstress separations. No evidence of pre-existing damage such as corrosion or fatigue was found.

Probable Cause

The National Transportation Safety Board determines the probable cause(s) of this accident to be:
The in-flight separation of the top of the rudder assembly for undetermined reasons.

Findings

Occurrence #1: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION
Phase of Operation: CRUISE - NORMAL

Findings
1. FLIGHT CONTROL,RUDDER - SEPARATION

Pilot Information

Certificate:	Commercial	**Age:**	52
Airplane Rating(s):	Multi-engine Land; Single-engine Land	**Instrument Rating(s):**	Airplane; Helicopter
Other Aircraft Rating(s):	Helicopter	**Instructor Rating(s):**	None
Flight Time:	10485 hours (Total, all aircraft), 4425 hours (Total, this make and model), 10300 hours (Pilot In Command, all aircraft)		

Co-Pilot Information

Certificate:	Commercial	**Age:**	43
Airplane Rating(s):	Multi-engine Land; Single-engine Land	**Instrument Rating(s):**	Airplane
Other Aircraft Rating(s):	None	**Instructor Rating(s):**	
Flight Time:	6315 hours (Total, all aircraft), 246 hours (Total, this make and model), 5500 hours (Pilot In Command, all aircraft), 50 hours (Last 90 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Rockwell	**Registration:**	N77UA
Model/Series:	690B	**Engines:**	2 Turbo Prop
Operator:	University of Arkansas	**Engine Manufacturer:**	Garrett
Operating Certificate(s) Held:	None	**Engine Model/Series:**	TPE 331-251K
Flight Conducted Under:	Part 91: General Aviation - Executive/Corporate		

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	**Condition of Light:**	Day
Observation Facility, Elevation:	BAZ, 651 ft msl	**Weather Information Source:**	Weather Observation Facility
Lowest Ceiling:	Broken / 1850 ft agl	**Wind Speed/Gusts, Direction:**	14 knots / , 50°
Temperature:	-8°C	**Visibility**	8 Miles
Precipitation and Obscuration:			
Departure Point:	Austin, TX (AUS)	**Destination:**	Corpus Christi, TX (CRP)

Wreckage and Impact Information

Crew Injuries:	2 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 None	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Latitude, Longitude:	29.790000, -98.605000		

Administrative Information

Investigator In Charge (IIC):	Thomas M Little	**Adopted Date:**	11/25/2003
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 pubinq@ntsb.gov, or at 800-877-6799. Dockets released after this date are available at http://dms.ntsb.gov/pubdms/.		