



Aviation Investigation Final Report

Location:	Tucson, Arizona	Accident Number:	LAX06CA027
Date & Time:	November 4, 2005, 08:30 Local	Registration:	N515AB
Aircraft:	Lee Kolb Mark III Classic	Aircraft Damage:	Substantial
Defining Event:		Injuries:	2 None
Flight Conducted Under:	Part 91: General aviation - Instructional		

Analysis

The airplane made a forced landing after the horizontal stabilizer attachment failed in flight. The instructional flight departed with the intention of practicing takeoffs and landings. On the downwind leg, the pilots heard a loud bang. The airplane lurched nose up, then nose down. The flight instructor took control of the aircraft and informed the tower he had a flight control problem. He was able to land the aircraft using cross control inputs. The instructor inspected the airplane and determined that the right horizontal stabilizer had separated from the fuselage due to a stainless steel "L" bracket failure. The instructor attributed the failure to a loose bolt in the "L" bracket that allowed a vibration and caused metal fatigue of the component.

Probable Cause and Findings

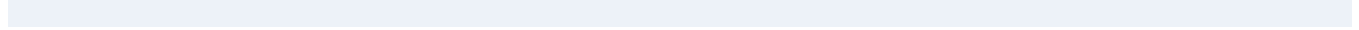
The National Transportation Safety Board determines the probable cause(s) of this accident to be: the fatigue failure of the attachment that secured the horizontal stabilizer to the fuselage.

Findings

Occurrence #1: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION
Phase of Operation: APPROACH - VFR PATTERN - DOWNWIND

Findings

1. (C) HORIZONTAL STABILIZER ATTACHMENT - FATIGUE
2. (C) HORIZONTAL STABILIZER ATTACHMENT - FAILURE, PARTIAL



Factual Information

On November 4, 2005, about 0830 mountain standard time, an experimental Lee Kolb Mark III Classic, N515AB, suffered an in-flight right horizontal stabilizer attachment failure at Ryan Airfield Airport (RYN), Tucson, Arizona. The pilot operated the borrowed airplane under the provisions of 14 CFR Part 91. The airline transport certified flight instructor (CFI) pilot, and the student pilot undergoing instruction (PUI) were not injured; the airplane sustained substantial damage. The instructional flight departed RYN about 0830. Visual meteorological conditions prevailed, and no flight plan had been filed.

In a written statement to the National Transportation Safety Board, the pilot stated that the accident occurred on the downwind to landing phase of the traffic pattern. The instructional flight departed with the intention of practicing takeoffs and landings. On the right downwind leg they heard a "loud bang." The airplane lurched nose up, then nose down. The flight instructor took control of the aircraft and informed the tower he had a "serious" control problem. The pilot was able to land the aircraft using cross control inputs. After landing, the CFI was able to taxi safely to parking. Upon inspection of the airplane by the CFI, it was determined that the right horizontal stabilizer had separated from the fuselage due to a stainless steel "L" bracket failure. In the CFI's Description of Damage to Aircraft and Other Property section of his written report, he indicated that a bolt in the "L" bracket was found slightly loose, "which allowed a slight vibration and this caused metal fatigue over its 545 [hours] of flight [time]."

ADDITIONAL INFORMATION

As a result of the accident, the pilot recommended to other Kolb owners (via the Kolb Kolb owner website) to replace the "L" brackets at the 250-hour inspection and to install a second set of stabilizer cables on the horizontal stabilizer.

Pilot Information

Certificate:	Airline transport; Commercial; Flight instructor	Age:	80,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	Airplane multi-engine; Airplane single-engine; Instrument airplane	Toxicology Performed:	No
Medical Certification:	Class 2	Last FAA Medical Exam:	October 1, 2005
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	April 1, 2005
Flight Time:	18050 hours (Total, all aircraft), 3 hours (Total, this make and model), 17766 hours (Pilot In Command, all aircraft), 130 hours (Last 90 days, all aircraft), 49 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Lee Kolb	Registration:	N515AB
Model/Series:	Mark III Classic	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Experimental (Special)	Serial Number:	101553
Landing Gear Type:	Tailwheel	Seats:	2
Date/Type of Last Inspection:	May 1, 2005 100 hour	Certified Max Gross Wt.:	1100 lbs
Time Since Last Inspection:	40 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	545 Hrs as of last inspection	Engine Manufacturer:	Rotax
ELT:	Installed, not activated	Engine Model/Series:	912S
Registered Owner:	Roger Lee & Mike Gray	Rated Power:	100 Horsepower
Operator:	William D. Fulton	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:		Distance from Accident Site:	
Observation Time:		Direction from Accident Site:	
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	/ None	Turbulence Type Forecast/Actual:	/
Wind Direction:		Turbulence Severity Forecast/Actual:	/
Altimeter Setting:		Temperature/Dew Point:	24°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Tucson, AZ (RYN)	Type of Flight Plan Filed:	None
Destination:	Tucson, AZ (RYN)	Type of Clearance:	None
Departure Time:	08:30 Local	Type of Airspace:	

Airport Information

Airport:	Ryan Field Airport RYN	Runway Surface Type:	Asphalt
Airport Elevation:	2417 ft msl	Runway Surface Condition:	Dry
Runway Used:	6	IFR Approach:	None
Runway Length/Width:	4900 ft / 75 ft	VFR Approach/Landing:	Forced landing;Traffic pattern

Wreckage and Impact Information

Crew Injuries:	2 None	Aircraft Damage:	Substantial
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 None	Latitude, Longitude:	32.142223,-111.174446

Administrative Information

Investigator In Charge (IIC):	Plagens, Howard
Additional Participating Persons:	John Eller; Federal Aviation Administration; Scottsdale, AZ
Original Publish Date:	February 28, 2006
Last Revision Date:	
Investigation Class:	Class
Note:	This accident report documents the factual circumstances of this accident as described to the NTSB.
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=62843

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person” (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available [here](#).