



# Aviation Investigation Final Report

<b>Location:</b>	Glendale, Arizona	<b>Accident Number:</b>	LAX03LA104
<b>Date &amp; Time:</b>	March 3, 2003, 14:00 Local	<b>Registration:</b>	N95FT
<b>Aircraft:</b>	Towner Kit Fox 4	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>		<b>Injuries:</b>	2 None
<b>Flight Conducted Under:</b>	Part 91: General aviation - Instructional		

## Analysis

The airplane impacted a dirt bank and nosed over during an emergency landing after the airplane lost a portion of its propeller during flight. During cruise flight, the pilots heard a loud "womp" followed by a vibration. The pilot could see that the propeller was split and a piece of it was missing. The pilot and his CFI advised the tower that they would be making an emergency landing. They shut down the engine, and made an approach to land in an alfalfa field; however, they hit the bank. The pilot found a small feather with a reddish colored material on the propeller after the accident. A propeller examination revealed no preimpact anomalies. Laboratory examination of the propeller revealed positive test results for blood and animal tissue.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the propeller's separation in-flight as a result of a bird strike.

### Findings

Occurrence #1: IN FLIGHT COLLISION WITH OBJECT  
Phase of Operation: CRUISE

#### Findings

1. (C) OBJECT - BIRD(S)

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Occurrence #2: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION  
Phase of Operation: CRUISE

Findings

2. (C) PROPELLER SYSTEM/ACCESSORIES, BLADE - SEPARATION

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Occurrence #3: FORCED LANDING

Phase of Operation: EMERGENCY DESCENT/LANDING

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Occurrence #4: ON GROUND/WATER ENCOUNTER WITH TERRAIN/WATER

Phase of Operation: LANDING - ROLL

Findings

3. TERRAIN CONDITION - DIRT BANK/RISING EMBANKMENT

## Factual Information

On March 3, 2003, about 1400 mountain standard time, a homebuilt experimental Towner Kit Fox 4, N95FT, nosed over during an emergency landing at Glendale, Arizona, after losing a portion of its propeller during flight. The pilot/owner was operating the airplane on a local area instructional flight under the provisions of 14 CFR Part 91. Visual meteorological conditions prevailed, and no flight plan had been filed. The private pilot and the certified flight instructor (CFI) were not injured; the airplane sustained substantial damage. The flight departed Glendale Municipal Airport about 1310.

In a written statement submitted by the owner of the airplane, he stated that shortly after calling Glendale tower, they heard a loud "womp" followed by a vibration. The pilot reported that he could see the propeller had split and a piece of it was missing. The pilot and his CFI advised the tower that they would be making an emergency landing. They shut down the engine and made an approach to land in an alfalfa field. During the landing roll out, the airplane impacted a dirt bank and came to rest inverted.

Tennessee Propeller, Inc., Normandy, Tennessee, examined the propeller under the surveillance of a Federal Aviation Administration aviation safety inspector. The propeller had 38 plies of wood veneer that were laminated as a blank prior to machine shaping and sanding. One blade sustained damage; the other blade did not. The damaged blade had evidence of mud on the surface and water in the grain. A large piece of the blade fit into a portion of the propeller that had the damage. However, a large portion of the blade was still missing. The damage appeared to result from bending of the blade to a degree that a large portion failed in a negative direction to that of normal thrust. Because the piece of the propeller that had separated in flight was not recovered, the inspector could not conclude that the propeller failed in flight.

The National Transportation Safety Board investigator-in-charge (IIC) interviewed the pilot by telephone after the propeller examination. The pilot reported that prior to the propeller separation he did not feel any vibrations or observe any nicks on the propeller. After the unusual sound just prior to landing, the CFI noticed a portion of the propeller fall to the ground. After the accident, the pilot noticed a small feather on the propeller and reddish colored material.

The IIC sent the propeller to the Safety Board Materials Laboratory, Washington D.C., for examination. The specialist took samples of the propeller and subjected them to Phenolphthalein presumptive blood tests. Each test responded with positive results. The positive tests suggested that animal tissue was present. The specialist took an additional sample from the root of the blade, immersed it in water, and subjected it to ultrasonic agitation. The specialist filtered the resulting cloudy liquid, and examined the particles using a

stereomicroscope. The residue was medium brown colored containing tan colored particles with a gel-like consistency. A singular piece of the residue measured approximately 0.016-inch long and 0.0025-inch diameter. The report (NTSB Report No. 03-803) is contained in the docket for this accident.

### Pilot Information

<b>Certificate:</b>	Private	<b>Age:</b>	67,Male
<b>Airplane Rating(s):</b>	Single-engine land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	None	<b>Second Pilot Present:</b>	Yes
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 3 Valid Medical--w/ waivers/lim	<b>Last FAA Medical Exam:</b>	February 4, 2003
<b>Occupational Pilot:</b>	UNK	<b>Last Flight Review or Equivalent:</b>	July 12, 2002
<b>Flight Time:</b>	761 hours (Total, all aircraft), 3 hours (Total, this make and model), 3 hours (Last 30 days, all aircraft)		

### Flight instructor Information

<b>Certificate:</b>	Commercial; Flight instructor	<b>Age:</b>	82,Male
<b>Airplane Rating(s):</b>	Single-engine land; Multi-engine land	<b>Seat Occupied:</b>	Right
<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	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 2 Valid Medical--no waivers/lim.	<b>Last FAA Medical Exam:</b>	February 14, 2003
<b>Occupational Pilot:</b>	UNK	<b>Last Flight Review or Equivalent:</b>	February 14, 2002
<b>Flight Time:</b>	15000 hours (Total, all aircraft), 15000 hours (Pilot In Command, all aircraft), 40 hours (Last 90 days, all aircraft), 20 hours (Last 30 days, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Towner	<b>Registration:</b>	N95FT
<b>Model/Series:</b>	Kit Fox 4	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	Yes
<b>Airworthiness Certificate:</b>	Experimental (Special)	<b>Serial Number:</b>	1557
<b>Landing Gear Type:</b>	Tailwheel	<b>Seats:</b>	2
<b>Date/Type of Last Inspection:</b>	May 11, 2002 Annual	<b>Certified Max Gross Wt.:</b>	1050 lbs
<b>Time Since Last Inspection:</b>		<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	146 Hrs as of last inspection	<b>Engine Manufacturer:</b>	Volkswagen
<b>ELT:</b>	Installed, not activated	<b>Engine Model/Series:</b>	2180 Type I
<b>Registered Owner:</b>	Andrew Schaefer	<b>Rated Power:</b>	75 Horsepower
<b>Operator:</b>		<b>Operating Certificate(s) Held:</b>	None

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	GEU, 1066 ft msl	<b>Distance from Accident Site:</b>	
<b>Observation Time:</b>	13:47 Local	<b>Direction from Accident Site:</b>	
<b>Lowest Cloud Condition:</b>	Thin Overcast / 18000 ft AGL	<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>	Overcast / 18000 ft AGL	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	/ None	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>		<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	29.93 inches Hg	<b>Temperature/Dew Point:</b>	14°C / 3°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	Glendale, AZ (KGEU)	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>	(KGEU)	<b>Type of Clearance:</b>	VFR
<b>Departure Time:</b>	13:10 Local	<b>Type of Airspace:</b>	Class D

## Wreckage and Impact Information

<b>Crew Injuries:</b>	2 None	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>		<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	2 None	<b>Latitude, Longitude:</b>	33.527221,-112.29528

## Administrative Information

**Investigator In Charge (IIC):** Plagens, Howard

**Additional Participating Persons:** Ron Rosenhahn; Federal Aviation Administration; Scottsdale, AZ

**Original Publish Date:** December 28, 2004

**Last Revision Date:**

**Investigation Class:** [Class](#)

**Note:**

**Investigation Docket:** <https://data.nts.gov/Docket?ProjectID=56574>

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](#).