



# Aviation Investigation Final Report

<b>Location:</b>	GRIDLEY, California	<b>Accident Number:</b>	LAX00LA311
<b>Date &amp; Time:</b>	August 26, 2000, 09:06 Local	<b>Registration:</b>	N7SZ
<b>Aircraft:</b>	Perrucci Randall J REVOLUTION MINI-500	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>		<b>Injuries:</b>	1 None
<b>Flight Conducted Under:</b>	Part 91: General aviation - Personal		

## Analysis

While maneuvering at 700 feet agl, the pilot of the amateur-built helicopter felt something "break" and the fore-and-aft portion of the cyclic flight control system became inoperative (disconnected). He lowered the collective control, reduced engine power, and made a run-on landing in an open field. During the landing the toe of one skid "dug in" and the helicopter came to rest on its side. Postaccident examination revealed that a push-pull tube in the cyclic control system fractured circumferentially in the wall at one end near where a through-bolt attached the rod end fitting to the tube.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The fracture and separation of a control rod in the cyclic flight control system.

## Findings

Occurrence #1: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION  
Phase of Operation: MANEUVERING

### Findings

1. (C) ROTORCRAFT FLIGHT CONTROL,CYCLIC CONTROL ROD - FRACTURED
2. (C) ROTORCRAFT FLIGHT CONTROL,CYCLIC CONTROL ROD - SEPARATION
3. AUTOROTATION - PERFORMED - PILOT IN COMMAND

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Occurrence #2: ON GROUND/WATER ENCOUNTER WITH TERRAIN/WATER  
Phase of Operation: EMERGENCY LANDING

Findings

4. TERRAIN CONDITION - CROP

## Factual Information

On August 26, 2000, at 0906 hours Pacific daylight time, a Perrucci Revolution Mini-500 experimental helicopter, N7SZ, was substantially damaged during a forced landing near Gridley, California. The student pilot was not injured. Visual meteorological conditions prevailed and no flight plan was filed for the local area personal flight, which departed from the owner's property in Gridley about 0840. The amateur built helicopter was operated by the owner under 14 CFR Part 91.

The pilot reported that, while making a turn at 700 feet agl, he felt something break and the fore-and-aft portion of the cyclic flight control system became inoperative (disconnected). He lowered the collective control, reduced engine power, and made a run-on landing in an open field. During the landing the toe of one skid "dug in" and the helicopter came to rest on its side.

Postaccident examination revealed that a push-pull tube in the cyclic control system fractured circumferentially in the wall at one end near where a through-bolt attached the rod end fitting to the tube. The assembly was Revolution Helicopters part number 0165.

### Pilot Information

<b>Certificate:</b>	Student	<b>Age:</b>	38, Male
<b>Airplane Rating(s):</b>	None	<b>Seat Occupied:</b>	Front
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	None	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 3 Valid Medical--no waivers/lim.	<b>Last FAA Medical Exam:</b>	September 16, 1998
<b>Occupational Pilot:</b>	UNK	<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	131 hours (Total, all aircraft), 87 hours (Total, this make and model), 97 hours (Pilot In Command, all aircraft), 34 hours (Last 90 days, all aircraft), 15 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Perrucci Randall J	<b>Registration:</b>	N7SZ
<b>Model/Series:</b>	REVOLUTION MINI-500 REVOLUTION	<b>Aircraft Category:</b>	Helicopter
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	Yes
<b>Airworthiness Certificate:</b>	Experimental (Special)	<b>Serial Number:</b>	0098
<b>Landing Gear Type:</b>	Skid	<b>Seats:</b>	1
<b>Date/Type of Last Inspection:</b>	August 22, 2000 Unknown	<b>Certified Max Gross Wt.:</b>	975 lbs
<b>Time Since Last Inspection:</b>	1 Hrs	<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	928 Hrs	<b>Engine Manufacturer:</b>	Rotax
<b>ELT:</b>	Not installed	<b>Engine Model/Series:</b>	582
<b>Registered Owner:</b>	RANDALL J. PERRUCCI	<b>Rated Power:</b>	80 Horsepower
<b>Operator:</b>		<b>Operating Certificate(s) Held:</b>	None
<b>Operator Does Business As:</b>		<b>Operator Designator Code:</b>	

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	OVE ,192 ft msl	<b>Distance from Accident Site:</b>	8 Nautical Miles
<b>Observation Time:</b>	08:53 Local	<b>Direction from Accident Site:</b>	5°
<b>Lowest Cloud Condition:</b>	Clear	<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>	None	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	3 knots /	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	0°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	29 inches Hg	<b>Temperature/Dew Point:</b>	72°C / 48°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	, CA	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>		<b>Type of Clearance:</b>	None
<b>Departure Time:</b>	08:40 Local	<b>Type of Airspace:</b>	Class G

## Airport Information

<b>Airport:</b>		<b>Runway Surface Type:</b>	
<b>Airport Elevation:</b>		<b>Runway Surface Condition:</b>	
<b>Runway Used:</b>	0	<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>		<b>VFR Approach/Landing:</b>	Forced landing

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 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>	1 None	<b>Latitude, Longitude:</b>	39.350776,-121.759002(est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Parker, Richard
<b>Additional Participating Persons:</b>	BRIAN L ALLEN; SACRAMENTO , CA
<b>Original Publish Date:</b>	November 1, 2001
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class</a>
<b>Note:</b>	The NTSB traveled to the scene of this accident.
<b>Investigation Docket:</b>	<a href="https://data.ntsb.gov/Docket?ProjectID=50126">https://data.ntsb.gov/Docket?ProjectID=50126</a>

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](#).