



Aviation Investigation Final Report

Location:	PALO ALTO, California	Accident Number:	LAX89LA055
Date & Time:	November 21, 1988, 18:11 Local	Registration:	N6113S
Aircraft:	Air & Space 18A	Aircraft Damage:	Substantial
Defining Event:		Injuries:	1 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

THE PILOT STATED THAT HE LOST DIRECTIONAL CONTROL OF THE GYROPLANE DURING THE LANDING ROLL, DEPARTED THE RWY AND NOSED OVER. THE GYROPLANE TOUCHED DOWN NORMALLY ON THE MAIN LANDING GEAR AT AN INDICATED AIRSPEED OF ABOUT 20 MPH. AS THE GYROPLANE SLOWED FURTHER, THE NOSE WHEEL TOUCHED DOWN ON THE RUNWAY AND TRACKED THE CENTERLINE FOR ABOUT TEN FEET THEN VEERED TO THE LEFT. THE PILOT STATED THAT HE ATTEMPTED TO CORRECT THE GYROPLANE'S GROUND TRACK BY APPLYING THE RIGHT RUDDER AND BRAKE, BUT THE GYROPLANE CONTINUED TO TIGHTEN IN THE LEFT TURN. INSPECTION OF THE NOSE GEAR ASSEMBLY REVEALED A CRACK IN THE NOSE WHEEL SHIMMY DAMPER UPPER PHENOLIC COLLAR. THE CRACK IN THE COLLAR RESULTED IN THE NOSE WHEEL STRUT BECOMING LOCKED AND NOT ALLOWING NOSE WHEEL STEERING.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

Findings

Occurrence #1: LOSS OF CONTROL - ON GROUND/WATER
Phase of Operation: LANDING - ROLL

Findings

1. (C) LANDING GEAR,NOSE GEAR ASSEMBLY - CRACKED
2. (C) LANDING GEAR,NOSE GEAR STRUT - LOCKED

Occurrence #2: DRAGGED WING,ROTOR,POD,FLOAT OR TAIL/SKID
Phase of Operation: LANDING - ROLL

Factual Information

Pilot Information

Certificate:	Commercial; Flight instructor	Age:	31, Male
Airplane Rating(s):	Single-engine land; Single-engine sea; Multi-engine land	Seat Occupied:	Front
Other Aircraft Rating(s):	Gyroplane	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	Airplane single-engine; Instrument airplane	Toxicology Performed:	No
Medical Certification:	Class 2 Valid Medical--no waivers/lim.	Last FAA Medical Exam:	February 25, 1988
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	
Flight Time:	1100 hours (Total, all aircraft), 26 hours (Total, this make and model), 920 hours (Pilot In Command, all aircraft), 15 hours (Last 90 days, all aircraft), 10 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Air & Space	Registration:	N6113S
Model/Series:	18A 18A	Aircraft Category:	Gyroplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	18-19
Landing Gear Type:	Tricycle	Seats:	2
Date/Type of Last Inspection:	October 18, 1988 Annual	Certified Max Gross Wt.:	1800 lbs
Time Since Last Inspection:	62 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	397 Hrs	Engine Manufacturer:	LYCOMING
ELT:	Not installed	Engine Model/Series:	O-360-A1D
Registered Owner:	JOSEPH REINHARD	Rated Power:	180 Horsepower
Operator:	RIENHARD, JOESPH	Operating Certificate(s) Held:	None
Operator Does Business As:	PEGASUS ROTORCRAFT	Operator Designator Code:	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Night/bright
Observation Facility, Elevation:		Distance from Accident Site:	
Observation Time:		Direction from Accident Site:	
Lowest Cloud Condition:	Unknown	Visibility	4 miles
Lowest Ceiling:	Broken / 10000 ft AGL	Visibility (RVR):	
Wind Speed/Gusts:	/	Turbulence Type Forecast/Actual:	/
Wind Direction:	0°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30 inches Hg	Temperature/Dew Point:	10°C / 2°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:		Type of Flight Plan Filed:	None
Destination:		Type of Clearance:	None
Departure Time:	18:50 Local	Type of Airspace:	Class D

Airport Information

Airport:	PALO ALTO PAO	Runway Surface Type:	Asphalt
Airport Elevation:	5 ft msl	Runway Surface Condition:	Dry
Runway Used:	30	IFR Approach:	None
Runway Length/Width:	2500 ft / 75 ft	VFR Approach/Landing:	Full stop

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 None	Latitude, Longitude:	37.449707,-122.09938(est)

Administrative Information

Investigator In Charge (IIC):	Isbell, Shelby
Additional Participating Persons:	JOHN HOWARD; SAN JOSE , CA
Original Publish Date:	January 4, 1990
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=26303

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](#).