



Aviation Investigation Final Report

Location:	SCOTTSDALE, Arizona	Accident Number:	LAX92FA025
Date & Time:	October 26, 1991, 15:15 Local	Registration:	N9001S
Aircraft:	AEROSPATIALE AS350B	Aircraft Damage:	Substantial
Defining Event:		Injuries:	2 Minor, 1 None
Flight Conducted Under:	Part 91: General aviation - Instructional		

Analysis

THE CERTIFICATED COMMERCIAL PILOT/CERTIFIED FLIGHT INSTRUCTOR WAS CONDUCTING TRAINING WITH A SECOND PILOT IN HELICOPTER EMERGENCY PROCEDURES, THAT INCLUDED HYRAULICS OFF LANDINGS. ON THE THIRD LANDING WITHOUT HYRAULIC BOOST PRESSURE, AT AN AIRSPEED OF ABOUT 2 KNOTS AND A SKID HEIGHT OF ABOUT 1 FOOT, THE HELICOPTER BEGAN AN UNCOMMANDED TURN TO THE LEFT. THE PILOT ATTEMPTED TO COUNTER THE TURN BUT WAS UNABLE TO MOVE THE FLIGHT CONTROLS. THE HELICOPTER'S LEFT BANK ANGLE, NOSE DOWN ATTITUDE AND LEFT TURN CONTINUED UNTIL THE MAIN ROTOR BLADES STRUCK THE GROUND. THE LEFT FRONT PORTION OF THE FUSELAGE AND SKID TUBE THEN STRUCK THE GROUND. AN EXAMINATION OF THE HYDRAULIC SYSTEM, INCLUDING DISASSEMBLY OF THE MAIN ROTOR CONTROL SERVOS, FAILED TO LOCATE THE CAUSE OF THE MALFUNCTION. THIS IS THE SECOND RPTD HYD OFF FLT CONTROL SEIZURE THAT RESULTED IN AN ACCIDENT. THE FLT CREW OF BOTH HELICOPTERS WERE WELL QUALIFIED.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: AN UNDETERMINED MALFUNCTION OF THE HYDRAULIC SYSTEM IN WHICH THE SYSTEM WAS LOCKED, PREVENTING THE MOVEMENT OF THE FLIGHT CONTROLS, AND LOSS OF DIRECTIONAL CONTROL.

Findings

Occurrence #1: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION

Phase of Operation: HOVER

Findings

1. (C) HYDRAULIC SYSTEM - LOCKED
2. (C) HYDRAULIC SYSTEM - UNDETERMINED

Occurrence #2: LOSS OF CONTROL - IN FLIGHT

Phase of Operation: HOVER

Findings

3. (F) FLIGHT CONTROLS - NOT POSSIBLE - PILOT IN COMMAND
4. (F) DIRECTIONAL CONTROL - NOT POSSIBLE - PILOT IN COMMAND

Occurrence #3: IN FLIGHT COLLISION WITH TERRAIN/WATER

Phase of Operation: HOVER

Findings

5. TERRAIN CONDITION - GROUND

Factual Information

Pilot Information

Certificate:	Commercial; Flight instructor	Age:	37, Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	Helicopter	Restraint Used:	
Instrument Rating(s):	Airplane; Helicopter	Second Pilot Present:	Yes
Instructor Rating(s):	Helicopter	Toxicology Performed:	No
Medical Certification:	Class 1 Valid Medical--no waivers/lim.	Last FAA Medical Exam:	May 30, 1991
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	
Flight Time:	8248 hours (Total, all aircraft), 312 hours (Total, this make and model), 8185 hours (Pilot In Command, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	AEROSPATIALE	Registration:	N9001S
Model/Series:	AS350B AS350B	Aircraft Category:	Helicopter
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	1022
Landing Gear Type:	High skid	Seats:	5
Date/Type of Last Inspection:	October 21, 1991 Annual	Certified Max Gross Wt.:	4300 lbs
Time Since Last Inspection:	23 Hrs	Engines:	1 Turbo shaft
Airframe Total Time:	6641 Hrs	Engine Manufacturer:	TURBOMECA
ELT:	Installed, activated, did not aid in locating accident	Engine Model/Series:	ARRIEL 1B
Registered Owner:	MARK A. BERLIN TRUSTEE	Rated Power:	641 Horsepower
Operator:	LONE EAGLE AVIATION, INC.	Operating Certificate(s) Held:	On-demand air taxi (135)
Operator Does Business As:	EAGLE RESCUE OF ARIZONA	Operator Designator Code:	LNJA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	SDL ,1508 ft msl	Distance from Accident Site:	5 Nautical Miles
Observation Time:	15:46 Local	Direction from Accident Site:	125°
Lowest Cloud Condition:	Scattered / 25000 ft AGL	Visibility	40 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	7 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	180°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29 inches Hg	Temperature/Dew Point:	25°C / 3°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	SCOTTSDALE , AZ (SDL)	Type of Flight Plan Filed:	Company VFR
Destination:		Type of Clearance:	VFR
Departure Time:	14:30 Local	Type of Airspace:	Class G

Airport Information

Airport:		Runway Surface Type:	
Airport Elevation:		Runway Surface Condition:	
Runway Used:	0	IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	Full stop

Wreckage and Impact Information

Crew Injuries:	1 Minor, 1 None	Aircraft Damage:	Substantial
Passenger Injuries:	1 Minor	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 Minor, 1 None	Latitude, Longitude:	33.609508,-111.889984(est)

Administrative Information

Investigator In Charge (IIC):	Erickson, Scott
Additional Participating Persons:	CHARLES PRINCE; SCOTTSDALE , AZ DON KUHNS; WASHINGTON , DC
Original Publish Date:	May 3, 1993
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=27388

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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](#).