



National Transportation Safety Board Aviation Accident Data Summary

Location:	DOS PALOS, CA	Accident Number:	LAX95LA318
Date & Time:	09/01/1995, 0830 PDT	Registration:	N4027D
Aircraft:	HILLER UH-12E	Injuries:	1 None
Flight Conducted Under:	Part 137: Agricultural		

Analysis

THE PILOT WAS SPRAYING A TOMATO FIELD WHEN A STRONG VIBRATION STARTED THROUGH THE AIRFRAME, FOLLOWED IMMEDIATELY BY A SEVERE YAW. PEDAL INPUT HAD NO EFFECT ON THE YAW AND THE HELICOPTER BEGAN TO SPIN. THE PILOT REDUCED POWER AND LOWERED THE COLLECTIVE TO STOP THE YAW AND THE HELICOPTER LANDED HARD. AN FAA AIRWORTHINESS INSPECTOR EXAMINED THE WRECKAGE AT THE ACCIDENT SITE. ONE TAIL ROTOR BLADE WAS MISSING AND SUBSEQUENTLY FOUND ABOUT 100 FEET AWAY. THE INSPECTOR REPORTED THAT THE TENSION TORSION (TT) PLATES OF THE SEPARATED BLADE WERE BROKEN AT THE HUB ATTACH BOLTS. NO LEADING EDGE DAMAGE WAS OBSERVED ON THE BLADE. THE FRACTURED TT PLATES WERE SENT TO THE NTSB LAB WHERE REPRESENTATIVE PLATE FRACTURES WERE SELECTED FOR DETAILED EXAMINATION. FEATURES TYPICAL OF PROGRESSIVE FATIGUE CRACKING WERE OBSERVED. A MATERIAL ANALYSIS REVEALED THAT THE STRAPS WERE MADE FROM THE MANUFACTURER'S SPECIFIED MATERIAL. NO EVIDENCE OF FOREIGN ELEMENT CONTAMINATION WAS FOUND ON THE FRACTURE FACES. THE TAIL ROTOR TT BAR HAS A 12,500-HOUR LIFE LIMIT AND THE FRACTURED TT BAR HAD ACCUMULATED A TOTAL TIME IN SERVICE OF 3,710 HOURS. NO PRIOR INCIDENTS WERE FOUND IN THE FAA SERVICE DIFFICULTY REPORT DATA BASE.

Probable Cause

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the fatigue failure of the tail rotor tension torsion bar plates.

Findings

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

Findings

1. (C) ROTOR SYSTEM, TAIL ROTOR BLADE - FATIGUE
2. (C) ROTOR SYSTEM, TAIL ROTOR BLADE - SEPARATION
3. DIRECTIONAL CONTROL - NOT POSSIBLE - PILOT IN COMMAND

Occurrence #2: HARD LANDING
Phase of Operation: EMERGENCY DESCENT/LANDING

Findings

4. AIRCRAFT CONTROL - NOT POSSIBLE - PILOT IN COMMAND

Pilot Information

Certificate:	Commercial	Age:	32
Airplane Rating(s):	Multi-engine Land; Single-engine Land; Single-engine Sea	Instrument Rating(s):	None
Other Aircraft Rating(s):	Helicopter	Instructor Rating(s):	None
Flight Time:	8500 hours (Total, all aircraft), 3003 hours (Total, this make and model), 8390 hours (Pilot In Command, all aircraft), 300 hours (Last 90 days, all aircraft), 70 hours (Last 30 days, all aircraft), 5 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	HILLER	Registration:	N4027D
Model/Series:	UH-12E UH-12E	Engines:	1 Reciprocating
Operator:	BETTENCOURT FLYING SERVICE, IN	Engine Manufacturer:	LYCOMING
Operating Certificate(s) Held:		Engine Model/Series:	VO-540-C2A
Flight Conducted Under:	Part 137: Agricultural		

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	, 0 ft msl	Weather Information Source:	Pilot
Lowest Ceiling:	None / 0 ft agl	Wind Speed/Gusts, Direction:	Calm / ,
Temperature:	20° C	Visibility	30 Miles
Precipitation and Obscuration:			
Departure Point:	DELHI, CA (0M9)	Destination:	

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Latitude, Longitude:			

Administrative Information

Investigator In Charge (IIC): JEFF RICH Adopted Date: 01/29/1996

Investigation Docket: NTSB accident and incident dockets serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at pubinq@ntsb.gov, or at 800-877-6799. Dockets released after this date are available at <http://dms.nts.gov/pubdms/>.

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