



Aviation Investigation Final Report

Location:	CAMERON, Louisiana	Incident Number:	FTW88IA145
Date & Time:	August 6, 1988, 19:30 Local	Registration:	N3190K
Aircraft:	BELL 222UT	Aircraft Damage:	Minor
Defining Event:		Injuries:	2 None
Flight Conducted Under:	Part 135: Air taxi & commuter - Non-scheduled		

Analysis

PLT STATED THAT THE ACFT PITCHED 20 DEG NOSE DOWN WITHOUT WARNING WHILE IN CRUISE FLT AT 1,200' AND 120 KTS. FOLLOWING RECOVERY, THE ACFT REQUIRED ADDITIONAL RT PEDAL TO STAY IN TRIM AND IT FLEW ABOUT 10 DEG NOSED DOWN IN LVL FLT. FLT DIVERTED TO THE OPR'S BASE AND LANDED SUCCESSFULLY. EXAMINATION REVEALED THAT THE RT HORZ STAB HAD SEPARATED JUST OUTBOARD OF THE TAILBOOM. METALLURGICAL EXAMINATION OF THE SEPARATION REVEALED MULTIPLE FATIGUE ORIGINS IN THE AREAS OF BOTH THE FORWARD AND AFT TOP SPAR CAP RIVET HOLES AND THAT THE CRACK IN THE AFT SPAR HAD BEEN PRESENT FOR SOME TIME. PREVIOUS FAILURES IN THIS AREA HAD BEEN ATTRIBUTED TO WORKING RIVETS CAUSING STRESS CONCENTRATIONS IN THE RIVET HOLES. PREVENTION OF THIS TYPE FAILURE IS EFFECTED BY REPLACING THE AFFECTED RIVETS IN A TIMELY MANNER. MAINTENANCE RECORDS REVEALED THAT THE LEFT HORIZONTAL STABILIZER HAD BEEN REPAIRED ON 3 PRIOR OCCASIONS, BUT THERE WERE NO RECORDS OF REPAIRS ON THE RT STABILIZER.

Probable Cause and Findings

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

Findings

Occurrence #1: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION
Phase of Operation: CRUISE - NORMAL

Findings

1. (C) HORIZONTAL STABILIZER SURFACE - FATIGUE
2. HORIZONTAL STABILIZER SURFACE - FAILURE, TOTAL
3. (C) MAINTENANCE, INSPECTION - INADEQUATE - COMPANY MAINTENANCE PERSONNEL

Factual Information

Pilot Information

Certificate:	Commercial	Age:	49, Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Right
Other Aircraft Rating(s):	Helicopter	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 2 Valid Medical-w/ waivers/lim	Last FAA Medical Exam:	November 6, 1987
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	
Flight Time:	8491 hours (Total, all aircraft), 958 hours (Total, this make and model), 7774 hours (Pilot In Command, all aircraft), 93 hours (Last 90 days, all aircraft), 46 hours (Last 30 days, all aircraft), 6 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	BELL	Registration:	N3190K
Model/Series:	222UT 222UT	Aircraft Category:	Helicopter
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	47531
Landing Gear Type:	Emergency float	Seats:	8
Date/Type of Last Inspection:	August 3, 1988 Continuous airworthiness	Certified Max Gross Wt.:	8250 lbs
Time Since Last Inspection:	9 Hrs	Engines:	2 Turbo shaft
Airframe Total Time:	2712 Hrs	Engine Manufacturer:	LYCOMING
ELT:	Not installed	Engine Model/Series:	LT5-101-750C1
Registered Owner:	TEXTRON FINANCIAL CORP.	Rated Power:	700 Horsepower
Operator:	PETROLEUM HELICOPTERS, INC.	Operating Certificate(s) Held:	On-demand air taxi (135)
Operator Does Business As:		Operator Designator Code:	PHM

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	PHI ,15 ft msl	Distance from Accident Site:	10 Nautical Miles
Observation Time:	19:30 Local	Direction from Accident Site:	315°
Lowest Cloud Condition:	Unknown / 2500 ft AGL	Visibility	6 miles
Lowest Ceiling:	Broken / 2500 ft AGL	Visibility (RVR):	
Wind Speed/Gusts:	8 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	160°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29 inches Hg	Temperature/Dew Point:	26°C / 23°C
Precipitation and Obscuration:	Light - None - Rain		
Departure Point:	EAST CAMERON245, GM (EC)	Type of Flight Plan Filed:	Company VFR
Destination:	LAKE CHARLES , LA (LCH)	Type of Clearance:	None
Departure Time:	18:50 Local	Type of Airspace:	Class G

Airport Information

Airport:	PRIVATE	Runway Surface Type:	Asphalt
Airport Elevation:	15 ft msl	Runway Surface Condition:	Dry
Runway Used:	0	IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	Full stop;Traffic pattern

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Minor
Passenger Injuries:	1 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 None	Latitude, Longitude:	29.789022,-93.29029(est)

Administrative Information

Investigator In Charge (IIC):	Wandel, Warren
Additional Participating Persons:	EARL MCCARTHY; BATON ROUGE , LA
Original Publish Date:	June 11, 1990
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=22577

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