



National Transportation Safety Board Aviation Accident Final Report

Location:	HIGH ISL BLK595, GM	Accident Number:	FTW84FA216
Date & Time:	05/01/1984, 1400 CDT	Registration:	N763AL
Aircraft:	SIKORSKY S-76A	Aircraft Damage:	Substantial
Defining Event:		Injuries:	2 None
Flight Conducted Under:	Part 135: Air Taxi & Commuter - Non-scheduled		

Analysis

DURING CRUISE FLIGHT AT 500 FT OVER GULF WATERS, THE LEFT ENGINE SUSTAINED A MASSIVE, UNCONTAINED, EXPLOSIVE FAILURE. SHARPNEL PENETRATED THE RIGHT ENGINE, WHICH FAILED FROM DAMAGE. SHARPNEL ALSO PENETRATED THE AC AND DC JUNCTION BOXES, CAUSING COMPLETE ELECTRICAL FAILURE (NO MAYDAY CALL POSSIBLE). SHARPNEL FURTHER SEVERED THE TAIL ROTOR DRIVE SHAFT AND PENETRATED THE ACFT FUEL SYSTEM; FIRE BROKE OUT IN THE TRANSMISSION AREA AND THE COCKPIT FILLED WITH SMOKE. USING THE CO-PLT'S SIDE WINDOW FOR VISUAL ACQUISITION OF THE WATER SURFACE, A SUCCESSFUL AUTOROTATION WAS PERFORMED. HOWEVER, THE ACFT ROLLED OVER AND SANK SINCE THE EMERGENCY FLOATATION GEAR IS ELECTRICALLY OPERATED AND FAILED TO DEPLOY. AFTER SUCCESSFUL EVACUATION BY ALL OCCUPANTS, PLT RETURNED TO THE INVERTED ACFT AND DEPLOYED LIFE RAFTS. INVESTIGATION REVEALED LEFT ENGINE COMPRESSOR-TO-TURBINE COUPLING HAD FAILED IN FATIGUE. TURBINE WENT OVERSPEED AND BURST UNDER CENTRIFUGAL LOADS.

Probable Cause and Findings

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

Findings

Occurrence #1: LOSS OF ENGINE POWER(TOTAL) - MECH FAILURE/MALF
Phase of Operation: CRUISE - NORMAL

Findings

1. (C) TURBINE ASSEMBLY,SHAFT - FATIGUE
2. TURBINE ASSEMBLY,TURBINE WHEEL - OVERSPEED
3. TURBINE ASSEMBLY,TURBINE WHEEL - BURST

Occurrence #2: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION
Phase of Operation: CRUISE

Findings

4. (F) ELECTRICAL SYSTEM - DISABLED
5. (F) FUEL SYSTEM - FIRE
6. (F) ROTOR DRIVE SYSTEM,TAIL ROTOR DRIVE SHAFT - SEPARATION

Occurrence #3: FORCED LANDING
Phase of Operation: DESCENT - EMERGENCY

Findings

7. FUSELAGE,CREW COMPARTMENT - SMOKE

Occurrence #4: ROLL OVER
Phase of Operation: LANDING - FLARE/TOUCHDOWN

Findings

8. TERRAIN CONDITION - WATER,ROUGH
9. AUTOROTATION - PERFORMED - PILOT IN COMMAND
10. (F) MISC ROTORCRAFT,EMERGENCY FLOATATION GEAR - DISABLED

Factual Information

Pilot Information

Certificate:	Airline Transport	Age:	37, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Right
Other Aircraft Rating(s):	Helicopter	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane; Helicopter	Second Pilot Present:	Yes
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 1 Valid Medical--w/ waivers/lim.	Last FAA Medical Exam:	10/05/1983
Occupational Pilot:		Last Flight Review or Equivalent:	
Flight Time:	5092 hours (Total, all aircraft), 348 hours (Total, this make and model), 3839 hours (Pilot In Command, all aircraft), 53 hours (Last 90 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	SIKORSKY	Registration:	N763AL
Model/Series:	S-76A S-76A	Aircraft Category:	Helicopter
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Transport	Serial Number:	760019
Landing Gear Type:	Retractable - Tricycle	Seats:	14
Date/Type of Last Inspection:	03/26/1984, Continuous Airworthiness	Certified Max Gross Wt.:	7500 lbs
Time Since Last Inspection:	80 Hours	Engines:	2 Turbo Shaft
Airframe Total Time:	3589 Hours	Engine Manufacturer:	ALLISON
ELT:	Not installed	Engine Model/Series:	250-C30S
Registered Owner:	AIR LOGISTIC INC.	Rated Power:	250 hp
Operator:	AIR LOGISTIC INC.	Operating Certificate(s) Held:	On-demand Air Taxi (135)

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	, 0 ft msl	Distance from Accident Site:	0 Nautical Miles
Observation Time:	1400	Direction from Accident Site:	0°
Lowest Cloud Condition:	Clear / 0 ft agl	Visibility	5 Miles
Lowest Ceiling:	None / 0 ft agl	Visibility (RVR):	0 ft
Wind Speed/Gusts:	6 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	11°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29 inches Hg	Temperature/Dew Point:	23° C / 21° C
Precipitation and Obscuration:			
Departure Point:	HI ISL BLK 595, GM	Type of Flight Plan Filed:	Company VFR
Destination:	FREEPORT, TX	Type of Clearance:	Special IFR
Departure Time:	1325 CDT	Type of Airspace:	Class G

Airport Information

Airport:		Runway Surface Type:	
Airport Elevation:		Runway Surface Condition:	
Runway Used:	0	IFR Approach:	
Runway Length/Width:		VFR Approach/Landing:	

Wreckage and Impact Information

Crew Injuries:	2 None	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	On-Ground
Ground Injuries:	N/A	Aircraft Explosion:	In-Flight
Total Injuries:	2 None	Latitude, Longitude:	

Administrative Information

Investigator In Charge (IIC):	ARMOND V EDWARDS	Report Date:	
Additional Participating Persons:			
Publish Date:			
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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