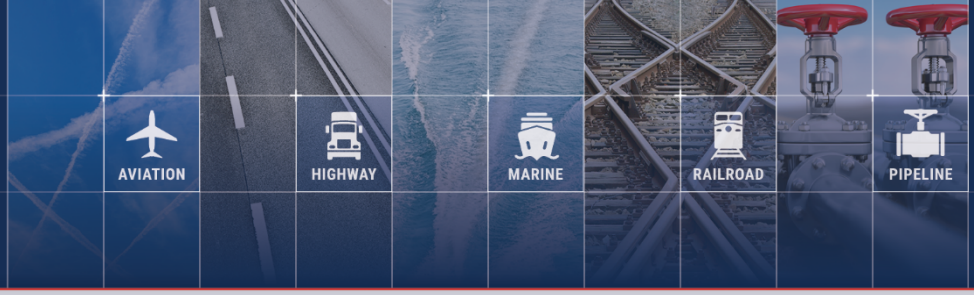

Aviation Investigation Final Report

Location:	HUMUULA, Hawaii	**Accident Number:**	LAX94LA134
Date & Time:	February 23, 1994, 16:13 Local	**Registration:**	N766MP
Aircraft:	AEROSPATIALE AS-350-B	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	2 Serious, 5 None
Flight Conducted Under:	Part 135: Air taxi & commuter - Non-scheduled - Sightseeing		

Analysis

THE PILOT WAS CONDUCTING A LOCAL SIGHTSEEING HELICOPTER FLIGHT IN MOUNTAINOUS TERRAIN. THE PILOT ENCOUNTERED CLOUDS COVERING THE MOUNTAIN PASS AND ELECTED TO PROCEED TOWARD AN ALTERNATE DESTINATION. THE CLOUDS FORCED THE PILOT TO CLIMB THE HELICOPTER TO 10,500 FT MSL. THE PILOT ALLOWED THE AIRSPEED TO DECREASE, EXECUTED A TURN, AND ENCOUNTERED A DOWNDRAFT. THE PILOT WAS UNABLE TO MAINTAIN THE ALTITUDE AND THE HELICOPTER COLLIDED WITH THE MOUNTAINOUS TERRAIN. THE PILOT REPORTED THAT THE HELICOPTER OR ENGINE DID NOT EXPERIENCE ANY MECHANICAL DIFFICULTIES BEFORE THE ACCIDENT. THE PERFORMANCE DATA SHOWED THAT THE HELICOPTER WAS CAPABLE OF A RATE OF CLIMB OF 700 FT/MIN IF THE PILOT HAD FLOWN THE PROPER BEST RATE OF CLIMB SPEED STRAIGHT AHEAD. AT 10,500 FT MSL, THE HELICOPTER COULD NOT HOVER IN OR OUT OF GROUND EFFECT.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's poor in-flight decision by failing to attain the best rate of climb speed and exceeding the helicopter's hover performance capability. The clouds and downdraft were factors in this accident.

Findings

Occurrence #1: IN FLIGHT ENCOUNTER WITH WEATHER
Phase of Operation: CRUISE

Findings
1. (F) WEATHER CONDITION - CLOUDS
2. (F) WEATHER CONDITION - DOWNDRAFT

Occurrence #2: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: MANEUVERING - TURN TO REVERSE DIRECTION

Findings
3. (C) IN-FLIGHT PLANNING/DECISION - POOR - PILOT IN COMMAND
4. (C) AIRCRAFT PERFORMANCE,HELICOPTER HOVER PERFORMANCE - EXCEEDED
5. (C) AIRSPEED - NOT ATTAINED - PILOT IN COMMAND

Occurrence #3: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: DESCENT - UNCONTROLLED

Factual Information

On February 23, 1994, about 1613 hours Hawaii standard time, an Aerospatiale AS350-B helicopter, N766MP, collided with the terrain at 10,500 feet mean sea level (msl) about 3 miles north of Humuula, Hawaii. The pilot was conducting a visual flight rules (VFR) sightseeing flight to the Volcanoes National Park, under Title 14 CFR Part 135. The helicopter, operated by Papillon Hawaiian Helicopters, Honolulu, Hawaii, received substantial damage. The certificated commercial pilot and four passengers were not injured; the remaining two passengers sustained serious injuries. Instrument meteorological conditions prevailed. The company provided flight following and the pilot filed a company VFR flight plan. The flight originated from Waikoloa about 1500 hours.

The pilot reported in the National Transportation Safety Board Pilot/Operator Aircraft Accident Report, NTSB Form 6120.1/2, that after departure the flight went southeast toward the Kilauea Volcano. The route of flight is through a high mountain pass between Mauna Kea and Mauna Loa. The pilot said that low clouds prevented him from proceeding with the planned flight. He began maneuvering around the clouds that were forming in the pass.

While maneuvering, the pilot climbed the helicopter through 10,500 feet msl and encountered a downdraft. The pilot attempted to turn away from the mountain toward the east, but without success. He said that the helicopter lacked sufficient power to prevent it from "...hitting the mountain...." The pilot said that after the helicopter came to rest, he shut off the engine. He also said that the helicopter did not experience any mechanical difficulties before colliding with the terrain.

The operator provided the Safety Board with the accident flight manifest and fueling records. The flight's weight prior to takeoff was 4,279 pounds -- 21 pounds under the maximum allowable gross weight.

The temperature near the accident area at sea level was 76 degrees Fahrenheit. Safety Board investigators used the standard adiabatic lapse rate of 3.5 degrees/1,000 feet and found the temperature at the accident site was 39 degrees Fahrenheit (3.8 degrees Celsius).

According to the flight manual, the fuel consumption rate is about 42 gallons/hour. Safety Board investigators calculated the helicopter's weight at the time of accident and found it to be about 3,941 pounds.

Safety Board investigators contacted Mr. Del Livingston, American Eurocopter, Dallas, Texas, and requested and received performance data for the accident helicopter. Mr. Livingston said that he had reviewed the performance data charts for the accident helicopter. His review revealed that based on the helicopter's flight parameters, it could not hover in or out of ground

effect. The helicopter could have maintained a rate of climb of about 700 feet/minute if flown straight ahead at Vy (best rate of climb speed - 55 knots) and at maximum continuous power. He also said that when the pilot turned the helicopter, and if he was below Vy and entered a downdraft, the power required to conduct this maneuver would have exceeded the available power.

Safety Board investigators review of the performance data confirmed Mr. Livingston's determination of the hover in or out of ground effect and its rate of climb capability.

Pilot Information

Certificate:	Commercial	**Age:**	49,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Right
Other Aircraft Rating(s):	Glider; Helicopter	**Restraint Used:**	
Instrument Rating(s):	Airplane; Helicopter	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 2 Valid Medical--no waivers/lim.	**Last FAA Medical Exam:**	May 24, 1993
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	
Flight Time:	5757 hours (Total, all aircraft), 522 hours (Total, this make and model), 2713 hours (Pilot In Command, all aircraft), 234 hours (Last 90 days, all aircraft), 60 hours (Last 30 days, all aircraft), 6 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	AEROSPATIALE	**Registration:**	N766MP
Model/Series:	AS-350-B AS-350-B	**Aircraft Category:**	Helicopter
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	1301
Landing Gear Type:	Retractable - Tricycle	**Seats:**	7
Date/Type of Last Inspection:	February 14, 1994 100 hour	**Certified Max Gross Wt.:**	4300 lbs
Time Since Last Inspection:	27 Hrs	**Engines:**	1 Turbo shaft
Airframe Total Time:	9687 Hrs	**Engine Manufacturer:**	TURBOMECA
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	ARRIEL 1B
Registered Owner:	PAPILLON AIRWAYS, INC.	**Rated Power:**	529 Horsepower
Operator:	PAPILLON HAWAIIAN HELICOPTERS	**Operating Certificate(s) Held:**	On-demand air taxi (135)
Operator Does Business As:		**Operator Designator Code:**	ILNA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument (IMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	ITO	**Distance from Accident Site:**	
Observation Time:	15:52 Local	**Direction from Accident Site:**	
Lowest Cloud Condition:	Scattered / 1800 ft AGL	**Visibility**	10 miles
Lowest Ceiling:	Broken / 4800 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	6 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	20°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29 inches Hg	**Temperature/Dew Point:**	24°C / 21°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	WAIKILOA , HI	**Type of Flight Plan Filed:**	Company VFR
Destination:		**Type of Clearance:**	None
Departure Time:	15:00 Local	**Type of Airspace:**	Class G

Airport Information

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

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	2 Serious, 4 None	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 Serious, 5 None	**Latitude, Longitude:**	20.039585,-155.699661(est)

Administrative Information

Investigator In Charge (IIC):	Erickson, Scott
Additional Participating Persons:	JEFF WELLER; HONOLULU , HI
Original Publish Date:	December 19, 1994
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=28673