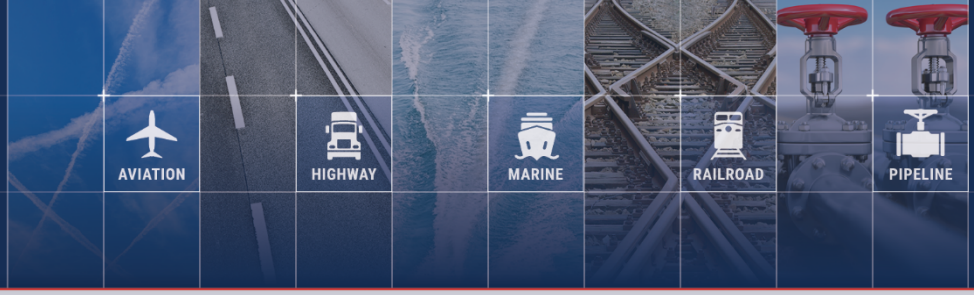

Aviation Investigation Final Report

Location:	MT. WAIALEALE, Hawaii	**Accident Number:**	LAX98FA211
Date & Time:	June 25, 1998, 09:32 Local	**Registration:**	N594BK
Aircraft:	Eurocopter AS-350-BA	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	6 Fatal
Flight Conducted Under:	Part 135: Air taxi & commuter - Non-scheduled - Sightseeing		

Analysis

While operating under visual flight rules on an on-demand for hire aerial sight seeing tour, the helicopter encountered instrument meteorological conditions and impacted the 80-degree upsloping face of a mountain, 200 feet below its ridge crest. The tour was to circumnavigate a mountainous area on the island, with a visit to an extinct volcanic crater in a mountain valley. Three helicopters departed on the tour, with about 2 minutes between each departure. The pilot, who was employed by the operator 2.5-months earlier, was in trail behind the company's most experienced (chief) pilot, and second most experienced pilot. None had received a weather briefing from an FAA approved source as required in the company operations specifications. Throughout the flight they were in radio contact with each other. The two lead pilots were a few minutes ahead of the accident pilot as he approached an area of the valley near the crater where inclement weather existed. The second pilot ahead of the accident helicopter said that when he exited the crater near the accident site, he encountered heavy rain showers and lowering ceilings and visibilities. Although the accident pilot attempted to follow the company pilots ahead of him, he did not observe the valley entrance to the Waialeale crater viewpoint and flew past it. As the flight progressed, the pilot encountered lowering ceilings, heavy intensity rain showers, and reduced flight visibility. The pilot became disoriented, misjudged his location, and while cruising toward what he believed was the prescribed crater entranceway inadvertently entered instrument meteorological conditions. Just before the collision, the pilot transmitted to the pilots ahead of him that the weather was getting worse and that he could not see. The second pilot then provided a suggested heading that would take the accident pilot away from the mountainous terrain. The helicopter impacted the mountain on a heading nearly opposite of the one suggested. The helicopter was subsequently recovered and examined. No evidence of any preimpact mechanical malfunction was noted. Between 30 and 45 minutes after the accident, one of the operator's tour pilots reported receiving the signal of an emergency locator transmitter (ELT). This pilot proceeded to pass by the general accident site area but was unable to observe the crashed helicopter due to the low level of clouds.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's decision to continue VFR flight into deteriorating weather conditions consisting of lowering ceilings and visibility in mountainous terrain, which resulted in the inadvertent entry into instrument meteorological conditions and a collision with a mountain side. A factor in the accident was the failure of the chief pilot, who had directly observed the deteriorating weather conditions, to direct the following pilots to avoid the area.

Findings

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

Findings
1. WEATHER CONDITION - LOW CEILING
2. WEATHER CONDITION - RAIN
3. WEATHER CONDITION - OBSCURATION
4. (C) VFR FLIGHT INTO IMC - CONTINUED - PILOT IN COMMAND

Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: CRUISE

Findings
5. TERRAIN CONDITION - MOUNTAINOUS/HILLY
6. (C) REMEDIAL ACTION - CONTINUED - PILOT IN COMMAND
7. (F) SUPERVISION - INADEQUATE - PILOT IN COMMAND

Factual Information

HISTORY OF FLIGHT

On June 25, 1998, about 0932 hours Hawaiian standard time, a Eurocopter, AS-350-BA, N594BK, operated by Ohana Helicopter Tours, collided with steep upsloping mountainous terrain near Mt. Waialeale, on the island of Kauai, Hawaii. Instrument meteorological conditions (IMC) existed in the vicinity of the accident site. The helicopter was destroyed, and the commercial pilot and the five passengers were fatally injured. A visual flight rules (VFR) company flight plan was filed with the operator. The accident occurred during an on-demand air taxi sightseeing flight that was performed under 14 CFR Part 135. The flight originated from the Lihue Airport, Kauai, about 0843.

The tour operator's president indicated that the purpose of the flight was to provide the fare-paying passengers with an aerial tour of the island of Kauai. The route of flight had previously been established, and it was known by the operator as its "Mokihana" tour route. This route circumnavigates the island, and provides for viewing specific topographical features. The flight normally lasts 48 to 50 minutes.

The operator's president reported that on June 25, it commenced flight operations for the day upon the departure of its three AS-350 helicopters from the Lihue Airport. The Lihue air traffic control personnel indicated that the helicopters took off in trail about 0840, 0842, and 0843. The helicopters' registration numbers were, respectively, N592BK, N593BK, and N594BK.

The operator's president also reported that the helicopters were scheduled to fly identical tours. Piloting the first helicopter was the company's chief pilot. The company's second most experienced line pilot flew the second helicopter, and the accident pilot, who had been employed for about 2.5 months, was the last to depart.

The pilots flying the first and second helicopters reported that they maintained radio contact with each other and with the accident pilot throughout their flights. At no time did they hear any indication from the accident pilot that he was experiencing any mechanical problems with the helicopter. These pilots reported to the National Transportation Safety Board investigator that they believed their flights had been performed in a manner consistent with the operator's previously anticipated route of flight. No unusual conditions were encountered. The first and second helicopters landed back at the Lihue Airport about 0929 and 0931, respectively. Neither of the pilots reported having observed the accident.

Minutes prior to the crash the company pilot flying the second helicopter was in radio contact with the accident pilot. Subsequently, the second pilot made a statement to the Safety Board investigator regarding his recollection of these communications, as follows:

He reported that, by regulation, he had announced his position using the common aircraft radio frequency by stating "three bravo kilo north wall." At this time it was about 0920. Light to moderate intensity rain was falling but the rain stopped at the mouth of the crater. The ceiling was about 3,000 feet mean sea level (msl) at the crater's entrance. The second pilot indicated that it took him about 2 minutes to fly in and out of the crater. The rain intensity was increasing and was becoming heavy as he was leaving. At this time he heard the accident pilot broadcast his position by stating that the "Hanalie ridge (about 3 miles north of the crater) does not look so good." The second pilot responded, "Chuck when I came across it it was light rain and the ceiling was good."

About 3 minutes later, the second pilot heard the accident pilot say "Boy the weather is looking bad right here." In reply to this remark, the second pilot stated "Chuck take a heading of one hundred twenty (a southeasterly course of 120 degrees) take your time." Review of an aeronautical chart revealed this heading would have taken the helicopter away from the mountains.

The second pilot subsequently gave the Safety Board investigator a written statement. In this statement the pilot provided a drawing showing his tour route, and additional information about his recollections during the flight.

PERSONNEL INFORMATION

The accident pilot held a commercial certificate with rotorcraft-helicopter and instrument helicopter privileges. His total flight time was about 3,170 hours. His experience flying the accident model of helicopter was about 220 hours, and this flight time was acquired during flights in the 90-day period that preceded the accident.

The pilot's personal flight record logbook was not provided to the Safety Board investigator for examination. A family member reported that it was not located.

In November 1997, the pilot retired from the armed forces of the United States after 20 years of service. In his subsequent employment resume for a civilian job, he indicated that he had experience flying H-3 Sikorsky helicopters and had functioned as a safety officer and an instrument check pilot. He was knowledgeable of the Hawaiian Islands having been stationed on Kauai for 2.5 years.

After the pilot completed the operator's training program, on April 10, 1998, the pilot passed a Federal Aviation Administration (FAA) administered 14 CFR Part 135 Airman Competency/Proficiency examination conducted by an FAA inspector. A Eurocopter, AS-350, was used during the flight test. Thereafter, the pilot assumed the duty position of pilot-in-command with the operator.

AIRCRAFT INFORMATION

Equipment and Certification.

The helicopter was equipped with flight instruments, including an attitude indicator (artificial horizon), and other gyroscopic instruments including a directional gyroscope (DG) and a turn coordinator. Regarding navigational instruments, the helicopter was equipped, in part, with a very high frequency omni directional range (VOR) receiver. Also, the helicopter was equipped with a transponder having Mode C (altitude reporting) capability. The FAA authorized operation of the helicopter only under visual flight rules.

History and Maintenance.

The helicopter was manufactured in December 1993. Its total airframe time was about 6,875 hours. The helicopter had been operated about 35 hours since receiving its last 100-hour inspection on June 18, 1998.

On June 24, after the last flight prior to the accident, the helicopter was inspected by company maintenance personnel in accordance with their "daily check" procedure. No outstanding squawks or deficiencies were noted in the records, and no maintenance was performed. In the maintenance log, there was no reference to the Mode C transponder being inoperative.

The FAA participant reviewed the maintenance records and reported that all pertinent airworthiness directives had been complied with. A series of record keeping and procedural deficiencies were noted. These events were documented by the inspector in his "Inspector's Statement."

METEOROLOGICAL INFORMATION

Between 30 and 45 minutes after the accident, one of the operator's tour pilots reported receiving the signal of an emergency locator transmitter (ELT). This pilot proceeded to pass by the general accident site area but was unable to observe the crashed helicopter due to the low level of clouds.

Local Weather Conditions.

The accident site is about 1 nautical mile (nm) east of Mt. Kawaikini's peak, elevation 5,243 feet msl, which is about the highest elevation on Kauai. The area is known as being one of the wettest locations on earth, and records annually over 400 inches of rain.

The accident helicopter collided into a mountainside south of the Waialeale Crater. The pilot flying the lead helicopter reported to the Safety Board investigator that during his flight he had observed the center of the island was covered with clouds, and rain showers were prevalent. The pilot said it was a typical weather condition for the area. In the area of the north wall of the Waialeale Crater there was a 2,500-foot ceiling. The pilot further indicated that due to the

low ceiling and the rising terrain in the crater, he did not fly as far into the crater as usual. He encountered heavy rain showers and low clouds after exiting the crater.

Preflight Briefing and Operator Procedures.

According to Ohana's "Company Operations Manual-Helicopter," "The company pilot will, when requesting a weather report or forecast, use the services of the U.S. National Weather Service or a source approved by the FAA. If such a report is unavailable under VFR, the Pilot in Command may use weather information based on his own observation or of those who are competent to supply appropriate observations."

This internal company policy differs from that which the FAA required for the obtainment of aeronautical weather information. In the operator's FAA approved "Operations Specifications," the following procedure is mandated: "Pilot calls National Weather Service, Lihue or Honolulu Flight Service Station for current and forecast weather information when a pilot report is not available for the intended area of operation within the past two hours."

The Honolulu Automated Flight Service Station reported that no services were provided to the accident aircraft on June 25, 1998. National Weather Service personnel reported to the Safety Board investigator that no services had been provided to the accident pilot.

The operator's chief pilot subsequently informed the Safety Board investigator that on the morning of the accident flight he only used an internet web site to obtain his weather information. The identified web site was not either of the Direct User Access Terminal (DUAT) vendors.

The operator's dispatcher reported that the accident pilot reported to work and proceeded directly to the accident helicopter. He did not visit the company office prior to takeoff on the accident flight.

Weather Conditions at Lihue Airport.

The closest aviation weather observation station to the accident site is located at the Lihue Airport. The airport's elevation is 153 feet msl.

At 0840, an amended weather forecast was issued for the Lihue Airport. In part, the forecast indicated that after 0900 the surface wind would be from 070 degrees at 15 knots. Scattered clouds were forecast with bases at 2,000 feet above ground level (agl), and a broken ceiling was forecast at 5,000 feet agl. Expect temporary conditions of 2 miles visibility with rain showers, few clouds at 1,000 feet, broken ceiling at 1,500 feet, and an overcast sky at 3,500 feet.

The airport is about 9 miles east-southeast of the accident site. In part, at 0925, Lihue reported its surface wind was from 060 degrees at 12 knots, 3 miles visibility, light rain and mist, few

clouds at 900 feet, and an overcast ceiling at 2,100 feet agl.

AIDS TO NAVIGATION

The nearest navigational aid (VORTAC) to the accident site is located at the Lihue Airport. This navigational aid (referred to as "LIH (H) VORTAC" is approximately 9 nm and 112 degrees from the accident site.

This VORTAC facility is a ground-based transmitter that continuously broadcasts very high frequency omni directional azimuth and distance information. The operator reported that the accident helicopter was equipped with avionics equipment that was capable of receiving the VOR signal.

A review of FAA records was performed from the Honolulu Automated Flight Service Station (AFSS), including its Daily Record of Facility Operation, air traffic control tapes and associated transcripts, and personnel statements. All aids to navigation associated with the pilot's route of flight were listed as having been in normal operational status during his flight.

COMMUNICATION

FAA Records.

According to the FAA, no communications with the accident helicopter were recorded after its departure from the Lihue Airport, and all communications were normal. The FAA did not receive any requests for assistance from the helicopter pilot.

Operator's Pilots.

The pilot flying the lead helicopter reported that when he was conducting his tour flight and was about 2 miles northwest of the Lihue Airport on approach for landing, he heard the accident pilot transmit "I can't see." At that time he believed the accident pilot was crossing the power lines in the vicinity of the Hanalei ridge (a few miles north of the Waialeale crater).

WRECKAGE AND IMPACT INFORMATION

The accident site is located in deep foliage on the southern face of a mountain adjacent to the south side of the Waialeale Crater. The approximate elevation of the crash site is between 2,350 and 2,450 feet msl. The site is about 200 feet below the ridgeline, on upsloping terrain that recovery personnel estimated angled upward at different locations between 40 and 85 degrees. The approximate coordinates of the crash site are 22 degrees 03 minutes north latitude by 159 degrees 29 minutes west longitude.

Evidence of fragmented main rotor blade structure was found at the initial point of impact, which was at the top of the wreckage distribution path. Based upon the topography of the

mountainside and damage to surrounding vegetation, the estimated impact heading was about 350 degrees, magnetic. This impact heading is within about 30 degrees of being perpendicular to the face of the mountain.

Components from the helicopter were observed over an approximate 100-foot-long path down sloping from the main rotor blade impact signatures. Directly beneath the rotor blade fragments, the two skids were found which had separated from their cross tube attachment assemblies. Beneath this wreckage, the vertical fin, tail rotor, tail boom, and the fuselage were found. The engine was located near the bottom of the wreckage distribution path. (See the Wreckage Diagram and photographs for additional details.)

A Hawaiian Sectional Aeronautical Chart, 58th edition, was found in the wreckage. The chart had an effective date of May 21, 1998. The chart bore the statement "This chart will become obsolete for use in navigation . . . on November 5, 1998."

A maintenance record form was also found in the wreckage. No discrepancies or remarks were noted on the document. The Hobbs meter dispatch time was recorded on the form at 1,260.6 hours.

MEDICAL AND PATHOLOGICAL INFORMATION

About June 27, 1998, an autopsy on the pilot was performed by the Medical Examiner, County of Kauai, at the Wilcox Memorial Hospital, 3420 Kuhio Highway, Lihue, Hawaii 96766.

The FAA's Civil Aeromedical Institute (CAMI), Toxicology and Accident Research Laboratory, performed toxicology tests on specimens from the pilot. No evidence of ethanol or any screened drugs was found.

TESTS AND RESEARCH

Airframe Examination.

The airframe and the cabin interior were found fragmented and destroyed. The fuselage structure was observed crushed in an upward and aft direction. The cabin seats were similarly deformed.

Multiple fractures were present in the impact-damaged flight controls and related systems. Rotational score marks and lacerations were observed on the inside of the tail rotor drive shaft cover.

The main rotor blades were fragmented. The flexible coupling at the main gearbox was found torsionally deformed in the direction of rotation. The engine to tail rotor drive shaft flexible coupling was observed similarly twisted. The right horizontal stabilizer was intact; the left was crushed. The vertical stabilizer was intact.

The attitude indicator was not found. The turn coordinator was located and its rotor was examined. Circumferential score marks were present on the rotor. The helicopter's clock was found stopped, and it was indicating 9:31:35. See the aircraft manufacturer participant's report for additional details.

Engine and Component Examination.

The engine was initially examined on scene, and then a teardown examination was performed at the manufacturer's Grand Prairie, Texas, facility. The engine was found impact damaged. During the external examination, fuel was observed in the fuel filter, the inlet of the fuel injection manifold, and the outlet of the fuel control unit. The exhaust tail pipe was observed bent (rather than cracked).

In summary, the internal examination revealed that components, such as the power turbine and the drive train from the axial compressor to the gearbox and to the starter generator, rotated. The chip plugs were clean. Rotational continuity was confirmed for all the accessories and the engine drive shaft. Other than the evidence of induction of mud and debris in various engine sections, no signatures of internal damage or discrepancies were noted.

ADDITIONAL INFORMATION

Company Information.

The operator's president reported that since commencing business in 1986 his firm has grown in size. He currently employs about 40 personnel and utilizes 3 helicopters. Air taxi tour flights are available to the public 7 days per week and 365 days per year.

The FAA issued an air carrier certificate and "Operations Specifications" to Ohana Helicopters that authorizes the company to conduct on-demand air taxi service in the accident model of helicopter. Pursuant to the "Operations Specifications," only flight under VFR was authorized.

Tour Route Information.

The operator reported that its most popular tour flight lasts about 50 minutes and is called the "Mokihana" tour. Ohana advertises that one of the sights viewable during the tour is the Mt. Waialeale area, including the Waialeale Crater.

Transponder Equipment and Usage.

In the operator's FAA approved "Operations Specifications," the FAA required that the operator's helicopter be equipped with a Mode C transponder. Also, the transponder must be operated with the Mode C function turned on during flight.

The operator reported to the Safety Board investigator that it was not company policy to require that the transponders be operating with the Mode C function turned on during flight. During the accident flight, no Mode C (altitude) data was recorded by the FAA for the accident helicopter.

Flight Rule Requirements.

Under the special operating rules for air tour operators in the State of Hawaii (known as SFAR 71) the regulations require that, during the tour, the pilot fly not lower than 1,500 feet agl or closer than 1,500 feet to any person or property. Also, under the basic visual flight rule weather minima regulations, the pilot is required to maintain a distance not less than 500 feet below clouds, 2,000 feet horizontally from clouds, and 1,000 over clouds. In addition, a minimum of 3-mile flight visibility is required when flying at 1,500 feet.

However, in accordance with the operator's request, on May 21, 1996, the FAA authorized a procedure in which the operator could deviate from the SFAR 71 when operating on a specific tour route and at specific locations. The operator reported that it intended to conduct the accident flight following the deviation procedure. In pertinent part, under the deviation the FAA provided the following requirements and authorizations:

1. All flights must maintain a minimum of 500 feet below clouds; 2. Conduct flights with at least 3 miles visibility; 3. Flights must maintain a minimum horizontal distance ("standoff"} of not less than 500 feet from raw terrain; and 4. Conduct flights no lower than 1,000 feet above the surface.

The FAA authorized tour route included the site-specific location in the area known as "Waialeale." If it became necessary to fly off of the established tour route, the SFAR 71 procedures/requirements would be applicable and mandated.

Radar Track.

The Fleet Area Control and Surveillance Facility (FACSFAC) in Pearl Harbor, Hawaii, recorded on radar the area of Kauai where the accident occurred. The FACSFAC air traffic control radar chief provided the Safety Board investigator with a rerecording of radar images for Kauai that included the time period between 0900 and 0940.

The accident site's approximate location was marked on the radar display as being about 8.75 nm miles west (272 degrees) of the Lihue navigational aid (VORTAC), which is located near the Lihue Airport. A review of the videotape shows that from about 0923 to 0933, several targets appeared within a couple of miles of the accident site marker. Thereafter, several of these targets appeared to depart the area and track in a southeasterly direction toward Lihue. One target, however, remained in the area. Between 0932 and 0933, this target tracked along a northeasterly course until it disappeared over the crash site marker. No altitude data (Mode C

transponder signal) was received on radar from the aircraft.

FAA Radar & Direction Finding Facilities.

Air traffic control tower personnel reported to the Safety Board investigator that the FAA does not assign discrete transponder codes for the tour helicopters, which operate under VFR.

The control tower is equipped with a DBRITE (Digital Bright Radar Indicator Tower Equipment) radar repeater scope. The controllers are not authorized to use the radar for traffic separation purposes. They can, however, observe traffic around the Lihue area, and in the area approaching the crater's entrance.

The Honolulu Flight Service Station has direction finding (DF) equipment. The equipment is operable. If requested by a pilot, in an emergency upon keying the aircraft's microphone his bearing to/from the facility can be nearly instantly ascertained.

Training Program Anomalies.

The operator's training program was examined. The FAA participant reported finding evidence that the pilot had received 2 of the 4 required hours of emergency and hazardous materials training. A written examination that the pilot took, and which the operator has subsequently acknowledged included questions having "some ambiguity," was scored as having been completed 100 percent correctly when in fact the pilot had missed questions related to weather minimums.

Wreckage Release.

With the exception of the engine, on July 2, 1998, all recovered wreckage was verbally released on scene to the operator's assigned insurance adjuster. The engine was released on April 27, 1999. No parts or records were retained.

Pilot Information

Certificate:	Commercial	**Age:**	45,Male
Airplane Rating(s):	None	**Seat Occupied:**	Right
Other Aircraft Rating(s):	Helicopter	**Restraint Used:**	
Instrument Rating(s):	Helicopter	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	Class 2 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	March 25, 1998
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	
Flight Time:	3170 hours (Total, all aircraft), 220 hours (Total, this make and model), 1900 hours (Pilot In Command, all aircraft), 220 hours (Last 90 days, all aircraft), 63 hours (Last 30 days, all aircraft), 7 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Eurocopter	**Registration:**	N594BK
Model/Series:	AS-350-BA AS-350-BA	**Aircraft Category:**	Helicopter
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	2735
Landing Gear Type:	Skid	**Seats:**	7
Date/Type of Last Inspection:	June 18, 1998 100 hour	**Certified Max Gross Wt.:**	4630 lbs
Time Since Last Inspection:	35 Hrs	**Engines:**	1 Turbo shaft
Airframe Total Time:	6875 Hrs	**Engine Manufacturer:**	Turbomeca
ELT:	Installed, activated, aided in locating accident	**Engine Model/Series:**	ARRIEL 1B
Registered Owner:	OHANA AVIATION, INC.	**Rated Power:**	641 Horsepower
Operator:		**Operating Certificate(s) Held:**	On-demand air taxi (135)
Operator Does Business As:	OHANA HELICOPTER TOURS	**Operator Designator Code:**	OHAA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument (IMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	LIH ,153 ft msl	**Distance from Accident Site:**	9 Nautical Miles
Observation Time:	09:25 Local	**Direction from Accident Site:**	112°
Lowest Cloud Condition:	Scattered / 900 ft AGL	**Visibility**	3 miles
Lowest Ceiling:	Overcast / 2100 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	12 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	60°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30 inches Hg	**Temperature/Dew Point:**	21°C / 20°C
Precipitation and Obscuration:	N/A - Showers - Rain		
Departure Point:	LIHUE , HI (LIH)	**Type of Flight Plan Filed:**	Company VFR
Destination:		**Type of Clearance:**	None
Departure Time:	08:43 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:**	None

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	5 Fatal	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	6 Fatal	**Latitude, Longitude:**	21.970741,-159.349899(est)

Administrative Information

Investigator In Charge (IIC):	Pollack, Wayne
Additional Participating Persons:	JOEL KOFF; HONOLULU , HI ROBERT REULAND; GRAND PRAIRIE , TX ARCHIE WHITTEN; GRAND PRAIRIE , TX
Original Publish Date:	May 17, 2001
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=29958