# Aviation Investigation Final Report

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| **Location:** | LEBEC, California | **Accident Number:** | LAX94FA100 |
| **Date & Time:** | January 20, 1994, 09:00 Local | **Registration:** | N5795X |
| **Aircraft:** | AEROSPATIALE AS-350D | **Aircraft Damage:** | Destroyed |
| **Defining Event:** | | **Injuries:** | 2 Fatal |
| **Flight Conducted Under:** | Part 135: Air taxi & commuter - Non-scheduled | | |

## Analysis

AN AEROSPATIALE AS350D HELICOPTER COLLIDED WITH TWO POWER TRANSMISSION CABLES IN MOUNTAINOUS TERRAIN WHILE PREPARING TO LAND AT AN OFF-AIRPORT SITE. THE HELICOPTER WAS NOT SCHEDULED TO LAND AT THE SITE AND THE PILOT HAD NOT LANDED AT THE SITE IN THE PAST. HIGHER MOUNTAINOUS TERRAIN IN THE AREA MASKED THE UNMARKED WIRES AND SUPPORT TOWERS. THE POWER TRANSMISSION CABLES WERE DEPICTED ON THE AERONAUTICAL SECTIONAL CHART AND WERE NOT REQUIRED TO BE MARKED.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: THE PILOT-IN-COMMAND'S INADEQUATE IN-FLIGHT PLANNING AND INADEQUATE VISUAL LOOKOUT. FACTORS IN THE ACCIDENT WERE MOUNTAINOUS TERRAIN WHICH MASKED THE PRESENCE OF THE WIRES AND THE PILOT-IN-COMMAND'S LACK OF FAMILIARITY WITH THE GEOGRAPHIC AREA.

### Findings

Occurrence #1: IN FLIGHT COLLISION WITH OBJECT
Phase of Operation: MANEUVERING

Findings
1. (F) OBJECT - WIRE,TRANSMISSION

2. (C) IN-FLIGHT PLANNING/DECISION - INADEQUATE - PILOT IN COMMAND
3. (F) LACK OF FAMILIARITY WITH GEOGRAPHIC AREA - PILOT IN COMMAND
4. (F) TERRAIN CONDITION - MOUNTAINOUS/HILLY
5. TERRAIN CONDITION - HIDDEN OBSTRUCTION(S)
6. (C) VISUAL LOOKOUT - INADEQUATE - PILOT IN COMMAND
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Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: DESCENT - UNCONTROLLED

Findings
7. TERRAIN CONDITION - MOUNTAINOUS/HILLY

## Factual Information

History of the Flight

On January 20, 1994, at 0900 hours Pacific standard time, an Aerospatiale AS350D helicopter, N5795X, collided with two power transmission cables in mountainous terrain in the Tejon Pass near Lebec, California. The helicopter was destroyed by impact forces and postimpact fire. The certificated commercial pilot and passenger were fatally injured. The helicopter was being operated as an on-demand air taxi flight by Kern Helicopters, Inc., Bakersfield, California, under 14 CFR Part 135 when the accident occurred. The flight originated at operator facilities in Bakersfield and was scheduled to return after conducting an aerial reconnaissance of a pipeline that may have been damaged during a recent earthquake in California. Visual meteorological conditions prevailed and a company VFR flight plan was on file at the operator's facilities.

According to the operator, the helicopter was hired to transport an engineer over a pipeline from the Four Corners Pipeline, Inc. pumping station near Lebec, California, to Newhall, California. The pipeline had been shutdown as a result of a recent earthquake on January 17, 1994. The pumping station was to resume operation and the helicopter was to trace the pipeline checking for leaks. According to the operator, there was a delay at the pumping station when the helicopter arrived. The helicopter was not scheduled to land at the pumping station. According to the operator, the patrol of this segment of pipeline was not routine for his company.

According to an employee of Four Corners Pipeline, Inc., located in Bakersfield, California, the engineer telephoned from the helicopter and indicated they intended to land at the pumping station site.

Three witnesses driving northbound on Interstate 5 east of the accident site observed the helicopter accident. They indicated the helicopter was flying straight at a low altitude when it began to spin 360 degrees. The helicopter disappeared behind a spur followed by a plume of smoke. The witnesses did not see the power transmission cables.

Two other witnesses west of the accident site heard unusual engine noises from the helicopter's engine and saw the helicopter spinning just before it collided with terrain. These witnesses did not see the helicopter collide with the power transmission cables.

Meteorological Information

The closest official weather observation station is Meadows Field, Bakersfield, California, which is located 35 nautical miles north of the accident site. The elevation of the weather

observation station is 507 feet msl. At 0954 hours, a scheduled record surface observation was reporting in part: Sky condition 25,000 feet thin scattered; Visibility, 4 statute miles in haze; Temperature, 57 degrees Fahrenheit; Dewpoint, 40 degrees Fahrenheit; Winds, 160 degrees at 4 knots; Altimeter, 30.18 inHg.

Wreckage Information

The accident site is located about 2 1/2 miles north of Lebec, California, in the Tejon Pass. The terrain is mountainous and sparsely covered by vegetation. Power transmission cables spanned 1,904 feet across the mouth of Johnson Canyon generally in a north-south direction. Two towers located on high terrain north and south of the canyon's mouth supported three 3/4-inch power transmission cables. The elevation of the cables at midspan was approximately 3,060 feet or about 250 feet above the ground. The power transmission cables were depicted on the Los Angeles Aeronautical Sectional Chart.

The south tower was about 80 feet high and was located on a spur at an elevation of 3,145 feet msl that extended north from a 3,528 foot msl hilltop. The north tower was located on higher terrain at 3,324 feet msl. The terrain southwest of the accident site was noted from Geological Survey Charts to be 6,973 feet msl. The terrain east of the accident site was noted from Geological Survey Charts to be 4,332 feet msl. The surrounding terrain masked the silhouette of the power transmission cable support towers and the cables suspended from them.

The helicopter collided with the power transmission cables about 200 feet north of the southern power transmission cable support tower. Two of the three cables were severed as a result of the collision. The helicopter's tail cone, vertical stabilizer, and tail rotor gear box separated and came to rest below the collision point with the wires.

The helicopter struck the vertical face of an outcrop of rocks located on the northern point of the spur. A postimpact fire erupted and the helicopter wreckage continued about 100 feet downslope spreading wreckage debris.

Segments of the helicopter's main rotor blades and about 5 feet of the tailboom that included the horizontal stabilizer were in the debris.

The helicopter's main wreckage was destroyed by the postimpact fire and was located at the base of the spur. The helicopter's engine, transmission, and main rotor hub remained intact in the main wreckage.

The three main rotor blades were attached to the hubs star flex assembly. Drive continuity was established for the engine to transmission drive shaft. The first segment of the tail rotor drive shaft was intact, but had separated from the engine gearbox output spline. Rotational scoring was noted at the aft end of the tail rotor drive shaft segment where it passed through a bulkhead deformed as a result of impact forces.

There was evidence of wire strikes on one of the main rotor blades, the left cockpit door, and the right side of the vertical stabilizer.

Medical and Pathological Information

Postmortem examinations were conducted by the Kern County Coroner's Office on January 21, 1994. According to the coroner's report, no preexisting conditions were noted during the autopsy which would have adversely affected the pilot's ability to control the helicopter.

The results of the toxicological analysis revealed negative findings for routine drug and alcohol tests.

Additional Information

The wreckage was released to the representatives of the owner on January 26, 1994.

## Pilot Information

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| **Certificate:** | Commercial | **Age:** | 52,Male |
| **Airplane Rating(s):** | Single-engine land | **Seat Occupied:** | Right |
| **Other Aircraft Rating(s):** | Helicopter | **Restraint Used:** | |
| **Instrument Rating(s):** | None | **Second Pilot Present:** | No |
| **Instructor Rating(s):** | None | **Toxicology Performed:** | Yes |
| **Medical Certification:** | Class 2 Valid Medical--no waivers/lim. | **Last FAA Medical Exam:** | April 1, 1993 |
| **Occupational Pilot:** | Yes | **Last Flight Review or Equivalent:** | |
| **Flight Time:** | 6000 hours (Total, all aircraft), 5000 hours (Total, this make and model) | | |

## Aircraft and Owner/Operator Information

| | | | |
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| **Aircraft Make:** | AEROSPATIALE | **Registration:** | N5795X |
| **Model/Series:** | AS-350D AS-350D | **Aircraft Category:** | Helicopter |
| **Year of Manufacture:** | | **Amateur Built:** | |
| **Airworthiness Certificate:** | Normal | **Serial Number:** | 1442 |
| **Landing Gear Type:** | Skid | **Seats:** | 6 |
| **Date/Type of Last Inspection:** | September 10, 1993 Continuous airworthiness | **Certified Max Gross Wt.:** | 4300 lbs |
| **Time Since Last Inspection:** | 24 Hrs | **Engines:** | 1 Turbo shaft |
| **Airframe Total Time:** | 921 Hrs | **Engine Manufacturer:** | LYCOMING |
| **ELT:** | Installed | **Engine Model/Series:** | LTS-101-600A |
| **Registered Owner:** | KERN HELICOPTERS, INC. | **Rated Power:** | 531 Horsepower |
| **Operator:** | | **Operating Certificate(s) Held:** | On-demand air taxi (135) |
| **Operator Does Business As:** | | **Operator Designator Code:** | YKHA |

## Meteorological Information and Flight Plan

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| **Conditions at Accident Site:** | Visual (VMC) | **Condition of Light:** | Day |
| **Observation Facility, Elevation:** | BFL ,507 ft msl | **Distance from Accident Site:** | 35 Nautical Miles |
| **Observation Time:** | 09:54 Local | **Direction from Accident Site:** | 330° |
| **Lowest Cloud Condition:** | Scattered / 25000 ft AGL | **Visibility** | 4 miles |
| **Lowest Ceiling:** | None | **Visibility (RVR):** | |
| **Wind Speed/Gusts:** | 4 knots / | **Turbulence Type Forecast/Actual:** | / |
| **Wind Direction:** | 160° | **Turbulence Severity Forecast/Actual:** | / |
| **Altimeter Setting:** | 30 inches Hg | **Temperature/Dew Point:** | 14°C / 4°C |
| **Precipitation and Obscuration:** | N/A - None - Haze | | |
| **Departure Point:** | BAKERSFIELD , CA | **Type of Flight Plan Filed:** | Company VFR |
| **Destination:** | | **Type of Clearance:** | None |
| **Departure Time:** | 08:30 Local | **Type of Airspace:** | Class G |

## Airport Information

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| **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

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| **Crew Injuries:** | 1 Fatal | **Aircraft Damage:** | Destroyed |
| **Passenger Injuries:** | 1 Fatal | **Aircraft Fire:** | On-ground |
| **Ground Injuries:** | N/A | **Aircraft Explosion:** | On-ground |
| **Total Injuries:** | 2 Fatal | **Latitude, Longitude:** | 34.859859,-118.869827(est) |

## Administrative Information

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| **Investigator In Charge (IIC):** | Wilcox, Thomas |
| **Additional Participating Persons:** | FRANK J MILLER; FRESNO , CA<br>DEL LIVINGSTON; GRAND PRAIRIE , TX<br>J0E BAILEY; DALLAS , TX<br>PAUL BENJUNAS; STRATFORD , CT |
| **Original Publish Date:** | November 14, 1994 |
| **Last Revision Date:** | |
| **Investigation Class:** | Class |
| **Note:** | |
| **Investigation Docket:** | https://data.ntsb.gov/Docket?ProjectID=28513 |