



National Transportation Safety Board Aviation Accident Final Report

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| Location: | MARATHON, FL | Accident Number: | ATL90GA023 |
| Date & Time: | 11/02/1989, 2130 EST | Registration: | N23576 |
| Aircraft: | SIKORSKY SK-70 | Aircraft Damage: | Destroyed |
| Defining Event: | | Injuries: | 1 Fatal, 2 Minor, 3 None |

Flight Conducted Under: Part 91: General Aviation - Public Aircraft

Analysis

THE HELICOPTER WAS ON A NIGHT LAW ENFORCEMENT MISSION OVR THE OCEAN NR MARATHON, FL. AFTER TKOF, THE PIC NOTED THE RADARALTIMETER NEEDLE, WHICH ACTIVATED THE LOW ALT WARNING, WAS NOT FUNCTIONAL, THOUGH THE DIGITAL DISPLAY & COPLT'S RADAR ALTIMETER WERE OPERATING NORMALLY. AFTER ENTERING THE MISSION AREA, THE PIC BGN RANDOM MNVRS WITH THE ALT VARYING BTN 200 & 300 FT ABV THE WATER. THERE WAS AN ESTD 1000 FT OVC SKY COND WITH NO VISIBLE HRZN. BOTH PLTS WERE WEARING NIGHT VISION GOGGLES. THE COPLT OPERATED THE SEARCH LIGHT & WAS TO MONITOR THE INSTS. WHILE MNVRG TO KEEP A BOAT IN VIEW, THE HELICOPTER BGN DSCNDG & CONTACTED THE WATER. IMMEDIATELY, THE CABIN FILLED WITH WATER. ALL OF THE OCCUPANTS EGRESSED SUCCESSFULLY FM THE HELICOPTER, EXCEPT THE COPLT, WHO PRESUMABLY DROWNED. THE PIC & 2 OF THE OTR CREWMEMBERS WERE NOT INJURED; THE REMAINING 2 RCVD MINOR INJURIES. AN AGENCY OPNS HANDBOOK DISCUSSED HAZARDS/INCIDENTS, BUT NO MISSION RISK ASSESSMENT PROGRAM WAS IN PLACE FOR MANAGEMENT TO ADEQUATELY IDENTIFY THE LEVEL OF RISK ASSOCIATED WITH THE OPN.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: FAILURE OF THE PILOT TO MAINTAIN THE PROPER ALTITUDE OVER THE OCEAN WATER. FACTORS RELATED TO THE ACCIDENT WERE: CONTINUED OPERATION OF THE HELICOPTER WITH A KNOWN PARTIAL DEFICIENCY OF THE RADIO ALTIMETER/WARNING SYSTEM, DARKNESS, THE PILOT'S LACK OF VISUAL PERCEPTION, FAILURE OF THE COPILOT TO ADEQUATELY MONITOR THE HELICOPTER'S ALTITUDE ABOVE THE WATER, AND INSUFFICIENT MANAGEMENT STANDARDS TO IDENTIFY INORDINATE FLIGHT RISKS.

Findings

Occurrence #1: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: MANEUVERING

Findings

1. (F) LIGHT CONDITION - DARK NIGHT
2. (F) FLIGHT/NAV INSTRUMENTS,ALTIMETER,RADIO - FAILURE,PARTIAL
3. (F) OPERATION WITH KNOWN DEFICIENCIES IN EQUIPMENT - CONTINUED
4. (F) INSUFF STANDARDS/REQUIREMENTS,OPERATION/OPERATOR - OTHER GOVT ORGANIZATION
5. TERRAIN CONDITION - WATER
6. (C) PROPER ALTITUDE - NOT MAINTAINED - PILOT IN COMMAND
7. (F) VISUAL/AURAL PERCEPTION - PILOT IN COMMAND
8. (F) MONITORING - INADEQUATE - COPILOT/SECOND PILOT

Factual Information

Pilot Information

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| Certificate: | Airline Transport | Age: | 46, 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: | Yes |
| Medical Certification: | Class 2 Valid Medical--no waivers/lim. | Last FAA Medical Exam: | 01/23/1989 |
| Occupational Pilot: | | Last Flight Review or Equivalent: | |
| Flight Time: | 4758 hours (Total, all aircraft), 490 hours (Total, this make and model), 4503 hours (Pilot In Command, all aircraft), 73 hours (Last 90 days, all aircraft), 31 hours (Last 30 days, all aircraft) | | |

Aircraft and Owner/Operator Information

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|--------------------------------------|--------------------------------------|---------------------------------------|---------------|
| Aircraft Make: | SIKORSKY | Registration: | N23576 |
| Model/Series: | SK-70 SK-70 | Aircraft Category: | Helicopter |
| Year of Manufacture: | | Amateur Built: | No |
| Airworthiness Certificate: | | Serial Number: | 81-23576 |
| Landing Gear Type: | Tailwheel | Seats: | 7 |
| Date/Type of Last Inspection: | 09/24/1989, Continuous Airworthiness | Certified Max Gross Wt.: | 20250 lbs |
| Time Since Last Inspection: | 2 Hours | Engines: | 2 Turbo Shaft |
| Airframe Total Time: | 2016 Hours | Engine Manufacturer: | GE |
| ELT: | Installed, not activated | Engine Model/Series: | T700-GE-700 |
| Registered Owner: | U.S. STATES CUSTOMS SERVICE | Rated Power: | 1560 hp |
| Operator: | U.S. STATES CUSTOMS SERVICE | Operating Certificate(s) Held: | None |

Meteorological Information and Flight Plan

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|----------------------------------|-------------------------|---|------------------|
| Conditions at Accident Site: | Visual Conditions | Condition of Light: | Night/Dark |
| Observation Facility, Elevation: | , 0 ft msl | Distance from Accident Site: | 0 Nautical Miles |
| Observation Time: | 0000 | Direction from Accident Site: | 0° |
| Lowest Cloud Condition: | Unknown / 0 ft agl | Visibility | 10 Miles |
| Lowest Ceiling: | Broken / 1000 ft agl | Visibility (RVR): | 0 ft |
| Wind Speed/Gusts: | 9 knots / | Turbulence Type Forecast/Actual: | / |
| Wind Direction: | Variable | Turbulence Severity Forecast/Actual: | / |
| Altimeter Setting: | 29 inches Hg | Temperature/Dew Point: | 24° C / -18° C |
| Precipitation and Obscuration: | | | |
| Departure Point: | HOMESTEAD AFB, FL (HST) | Type of Flight Plan Filed: | Company VFR |
| Destination: | (HST) | Type of Clearance: | None |
| Departure Time: | 1915 EST | Type of Airspace: | Class G |

Wreckage and Impact Information

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|---------------------|--------------------------|----------------------|-----------|
| Crew Injuries: | 1 Fatal, 2 Minor, 3 None | Aircraft Damage: | Destroyed |
| Passenger Injuries: | N/A | Aircraft Fire: | None |
| Ground Injuries: | N/A | Aircraft Explosion: | None |
| Total Injuries: | 1 Fatal, 2 Minor, 3 None | Latitude, Longitude: | |

Administrative Information

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|-----------------------------------|--|--------------|------------|
| Investigator In Charge (IIC): | PRESTON E HICKS | Report Date: | 09/05/1991 |
| Additional Participating Persons: | DEAN SPRINGER; OKLAHOMA CITY, OK FREDRICK L LEISLING; OKLAHOMA CITY, OK PAUL RAYFIELD; HOMESTEAD, FL | | |
| 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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The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).