# Aviation Investigation Final Report

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| **Location:** | OAKLAND, California | **Accident Number:** | LAX89FA238 |
| **Date & Time:** | July 11, 1989, 13:25 Local | **Registration:** | N288 |
| **Aircraft:** | ENSTROM F28F | **Aircraft Damage:** | Substantial |
| **Defining Event:** | | **Injuries:** | 2 None |
| **Flight Conducted Under:** | Part 91: General aviation - Public aircraft | | |

## Analysis

THE CERTIFICATED PRIVATE PILOT ELECTED TO CONDUCT A PRACTICE AUTOROTATION WITH TURN AND RECOVER WITH POWER. THE PILOT WAS FLYING WITH A PASSENGER. THE PILOT ALLOWED THE ROTOR RPM TO BLEED OFF AND WAS UNABLE TO RECOVER THE RPM BEFORE TOUCHDOWN. THE HELICOPTER LANDED HARD COLLAPSING THE SKID TYPE LANDING GEAR SYSTEM. THE MAIN ROTOR THEN CONTACTED THE TAILBOOM. THE HELICOPTER SLID ABOUT 100 FEET AFTER TOUCHDOWN AND ROTATED 90 DEGREES TO THE LEFT.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: FAILURE OF THE PILOT TO PROPERLY MAINTAIN ROTOR RPM THROUGHOUT THE AUTOROTATION.

### Findings

Occurrence #1: HARD LANDING
Phase of Operation: LANDING - FLARE/TOUCHDOWN

Findings
1. AUTOROTATION - PERFORMED - PILOT IN COMMAND
2. (C) ROTOR RPM - NOT MAINTAINED - PILOT IN COMMAND
3. FLARE - NOT ATTAINED - PILOT IN COMMAND

# Factual Information

## Pilot Information

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| **Certificate:** | Private | **Age:** | 38,Male |
| **Airplane Rating(s):** | None | **Seat Occupied:** | Left |
| **Other Aircraft Rating(s):** | Helicopter | **Restraint Used:** | |
| **Instrument Rating(s):** | None | **Second Pilot Present:** | No |
| **Instructor Rating(s):** | None | **Toxicology Performed:** | No |
| **Medical Certification:** | Class 2 Valid Medical--w/ waivers/lim | **Last FAA Medical Exam:** | September 12, 1989 |
| **Occupational Pilot:** | No | **Last Flight Review or Equivalent:** | |
| **Flight Time:** | 207 hours (Total, all aircraft), 78 hours (Total, this make and model), 65 hours (Pilot In Command, all aircraft), 63 hours (Last 90 days, all aircraft), 17 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft) | | |

## Aircraft and Owner/Operator Information

| | | | |
|---|---|---|---|
| **Aircraft Make:** | ENSTROM | **Registration:** | N288 |
| **Model/Series:** | F28F F28F | **Aircraft Category:** | Helicopter |
| **Year of Manufacture:** | | **Amateur Built:** | |
| **Airworthiness Certificate:** | Normal | **Serial Number:** | 742 |
| **Landing Gear Type:** | Skid | **Seats:** | 2 |
| **Date/Type of Last Inspection:** | June 15, 1989 100 hour | **Certified Max Gross Wt.:** | 2600 lbs |
| **Time Since Last Inspection:** | 63 Hrs | **Engines:** | 1 Reciprocating |
| **Airframe Total Time:** | 3304 Hrs | **Engine Manufacturer:** | LYCOMING |
| **ELT:** | Not installed | **Engine Model/Series:** | HIO-360-F1AD |
| **Registered Owner:** | OAKLAND POLICE DEPT. | **Rated Power:** | 225 Horsepower |
| **Operator:** | | **Operating Certificate(s) Held:** | None |
| **Operator Does Business As:** | | **Operator Designator Code:** | |

## Meteorological Information and Flight Plan

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| **Conditions at Accident Site:** | Visual (VMC) | **Condition of Light:** | Day |
| **Observation Facility, Elevation:** | | **Distance from Accident Site:** | |
| **Observation Time:** | | **Direction from Accident Site:** | |
| **Lowest Cloud Condition:** | Clear | **Visibility** | 20 miles |
| **Lowest Ceiling:** | None | **Visibility (RVR):** | |
| **Wind Speed/Gusts:** | / | **Turbulence Type Forecast/Actual:** | / |
| **Wind Direction:** | 0° | **Turbulence Severity Forecast/Actual:** | / |
| **Altimeter Setting:** | | **Temperature/Dew Point:** | |
| **Precipitation and Obscuration:** | No Obscuration; No Precipitation | | |
| **Departure Point:** | OAKLAND , CA (OAK ) | **Type of Flight Plan Filed:** | None |
| **Destination:** | | **Type of Clearance:** | None |
| **Departure Time:** | 12:12 Local | **Type of Airspace:** | Class G |

## Airport Information

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|---|---|---|---|
| **Airport:** | OAKLAND INT'L OAK | **Runway Surface Type:** | |
| **Airport Elevation:** | | **Runway Surface Condition:** | |
| **Runway Used:** | 0 | **IFR Approach:** | None |
| **Runway Length/Width:** | | **VFR Approach/Landing:** | Simulated forced landing |

## Wreckage and Impact Information

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|---|---|---|---|
| **Crew Injuries:** | 2 None | **Aircraft Damage:** | Substantial |
| **Passenger Injuries:** | | **Aircraft Fire:** | None |
| **Ground Injuries:** | N/A | **Aircraft Explosion:** | None |
| **Total Injuries:** | 2 None | **Latitude, Longitude:** | 37.749187,-122.130187(est) |

## Administrative Information

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| **Investigator In Charge (IIC):** | Wilcox, Thomas |
| **Additional Participating Persons:** | HOWARD MANNING; OAKLAND , CA |
| **Original Publish Date:** | July 22, 1992 |
| **Last Revision Date:** | |
| **Investigation Class:** | Class |
| **Note:** | |
| **Investigation Docket:** | https://data.ntsb.gov/Docket?ProjectID=26234 |

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