Aviation Safety Investigation Report 198902538

Enstrom F-28F

31 January 1989

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NOTE: All air safety occurrences reported to the ATSB are categorised and recorded. For a detailed explanation on Category definitions please refer to the ATSB website at www.atsb.gov.au.

Occurrence Number: 198902538 **Occurrence Type:** Accident
Location: Baulkham Hills NSW
Date: 31 January 1989 **Time:** 1338
Highest Injury Level: Fatal
Injuries:

	Fatal	Serious	Minor	None
Crew	1	0	0	0
Ground	0	0	0	-
Passenger	2	0	0	0
Total	**3**	**0**	**0**	**0**

Aircraft Details: Enstrom F-28F
Registration: VH-HAH
Serial Number: 729
Operation Type: Aerial Work
Damage Level: Destroyed
Departure Point: Castle Hill NSW
Departure Time: 1318
Destination: Castle Hill NSW

Approved for Release: 11th April 1991

Circumstances:

The flight was being conducted for the purpose of obtaining aerial photographs of a hospital located about two kilometres from the heliport. Two passengers were carried, one of whom was a photographer occupying the right seat. The weather was fine and mild, with scattered cloud at 2000 feet. The wind was reported to be south south-easterly at about 10-15 knots. The helicopter was seen to make a large right-hand circuit around the hospital at a height generally estimated to be between 600-1000 feet above the ground. It was then observed to commence a second circuit of the hospital. Whilst on a north-westerly heading, it was reported the aircraft either entered a hover, or slowed to a very low forward speed, for a short period. The nose of the helicopter was then observed to begin yawing to the right. The yaw developed into a series of tight spirals, during which the aircraft drifted in a downwind direction, at a relatively low rate of descent. Witnesses reported seeing the main rotor blades slow down during this phase. At about 50-100 feet above the ground, the helicopter was seen to then descend vertically in a steep, nose low attitude, substantially banked to the left, before impacting heavily in the front garden of an unoccupied house. Almost immediately after impact an intense fire broke out, incinerating the occupants of the helicopter before a rescue attempt could be made. The circumstances of the accident were consistent with a loss of tail rotor effectiveness, leading to an uncommanded yaw and loss of control. The aircraft was operating with a high power setting at maximum all up weight, at a very low forward speed, out of ground effect. It is considered probable that the groundspeed of the aircraft was less than the tailwind component, resulting in a tendency for the aircraft to yaw to the right, into the relative wind. To counteract this tendency, the pilot would have required considerable left pedal to maintain a constant heading. If, as is considered probable, the aircraft yawed rapidly to the right, very little, if any, additional anti-yaw control would have been available from the pedals. In general, the most appropriate course of action available to the pilot, following an uncommanded yaw to the right, would have been to apply full left pedal to counteract the yaw and to apply forward cyclic control to increase airspeed and translational lift. A reduction of

collective pitch could also have been used to assist in regaining directional control but may have resulted in an excessive rate of descent.

Significant Factors:

The following factors were considered relevant to the development of the accident

1. High gross weight combined with high required power.

2. Flight below translational speed, out of ground effect.

3. Tailwind component.

4. Uncommanded yaw due to loss of tail rotor effectiveness.

5. Following a loss of control, the pilot encountered conditions beyond his level of experience.