

**Aviation Safety Investigation Report
199400266**

**Beech Aircraft Corp
Bonanza**

02 February 1994

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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: 199400266 **Occurrence Type:** Accident
Location: Lithgow
State: NSW **Inv Category:** 3
Date: Wednesday 02 February 1994
Time: 1535 hours **Time Zone** EST
Highest Injury Level: Fatal
Injuries:

	Fatal	Serious	Minor	None	Total
Crew	0	1	0	0	1
Ground	0	0	0	0	0
Passenger	1	0	2	0	3
Total	1	1	2	0	4

Aircraft Manufacturer: Beech Aircraft Corp
Aircraft Model: A36
Aircraft Registration: VH-AKX **Serial Number:** E-1557
Type of Operation: Non-commercial Pleasure/Travel
Damage to Aircraft: Substantial
Departure Point: Merimbula NSW
Departure Time:
Destination: Lithgow NSW

Crew Details:

Role	Class of Licence	Hours on	
		Type	Hours Total
Pilot-In-Command	Private	67.8	232

Approved for Release: Friday, September 23, 1994

After an uneventful flight from Merimbula, the pilot overflew the airstrip to check the windsock. He noted that the windsock was swinging erratically around a mean direction of about 30 degrees left of the strip direction (approximately 140 degrees magnetic). The pilot then positioned the aircraft on the downwind leg to land towards the south-east.

Neither the pilot nor the surviving passengers reported any significant turbulence during the circuit. The pilot indicated that he was aiming to touch down about 100m in from the end of the strip. At what he thought was about 100 feet above the level of the strip, at an indicated airspeed of 85-90 kt, and with full flap selected, the aircraft rapidly lost altitude and landed very heavily a short distance in from the end of the strip. It then bounced, becoming airborne again.

The pilot reported that he was startled by the heavy landing. When the aircraft became airborne again, he momentarily applied power to go around but saw that the aircraft was headed towards trees so he closed the throttle. His memory from this point was not complete but he did recall applying full right rudder, with no apparent effect, as the aircraft headed towards the trees. He also recalled the stall warning operating twice - once during the sink which led to the heavy landing, and again when the aircraft bounced.

Examination of the scene of the accident revealed that after the aircraft bounced, it contacted the ground again, left wing tip first, about 150m beyond the initial impact point and heading towards the left side of the strip. By this stage, the aircraft had developed a marked right skid. It continued in this manner across a dirt mound at the left edge of the strip

and struck trees. The principal impact occurred when the aircraft fuselage just forward of the right wing root struck a large tree, causing severe deformation to the right side cockpit area.

The aircraft was equipped with an auto-pilot and a yaw damper. The pilot had conducted the cruise section of the flight with both these aids engaged. On arriving overhead the strip he had disengaged the autopilot via the control wheel disengage switch. In normal operations, this switch also disengages the yaw damper. On this occasion, the pilot had checked that the auto-pilot had disengaged, but did not confirm the yaw damper had disengaged. The pilot expressed the view that the difficulty he experienced in attempting to regain directional control when the aircraft was heading towards the left side of the strip could have been due to a problem with the yaw damper. However, a check of the yaw damper system after the accident did not reveal any faults.

The surface wind at the time of the accident was estimated by the Bureau of Meteorology to have been 110/15 knots.

The sequence of events described by the pilot indicates that the aircraft probably encountered windshear or a downdraft on late final approach. Given the prevailing wind conditions and the local topography, either of these phenomenon could have been present. The pilot's recollection that he heard the stall warning sound during the bounce, plus the fact that the aircraft then contacted the ground left wing tip first indicate that the aircraft probably stalled during the bounce (possibly as a result of the pilot closing the throttle), causing the left wing to drop. The effect of the left wing tip dragging on the strip surface would have been to yaw the aircraft further (i.e. exacerbate the right skid). The decreasing speed of the aircraft as it headed towards the edge of the strip, along with the large skid angle, would have reduced rudder authority. This would then have prevented the pilot regaining directional control of the aircraft.

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

1. Windshear or downdraft conditions caused the pilot to lose control of the aircraft on late final approach.
2. The aircraft probably stalled during the bounce after a heavy landing, causing the left wing to contact the runway and the aircraft to yaw further left.
3. A severe right skid and decreasing speed reduced rudder effectiveness and prevented the pilot from regaining directional control.