

**Aviation Safety Investigation Report
199201237**

**Pitts Aviation Enterprises
S-2A**

07 November 1992

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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: 199201237 **Occurrence Type:** Accident
Location: 4km NE Clyde
State: VIC **Inv Category:** 3
Date: Saturday 07 November 1992
Time: 1707 hours **Time Zone** ESuT
Highest Injury Level: Fatal
Injuries:

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

Aircraft Manufacturer: Pitts Aviation Enterprises
Aircraft Model: S-2A
Aircraft Registration: VH-SZA **Serial Number:** 2113
Type of Operation: Non-commercial Pleasure/Travel
Damage to Aircraft: Destroyed
Departure Point: Moorabbin VIC
Departure Time: 1652 ESuT
Destination: Moorabbin VIC

Crew Details:

		Hours on	
Role	Class of Licence	Type	Hours Total
Pilot-In-Command	Private	24.0	805
Other Pilot		0.3	3243

Approved for Release: Tuesday, June 21, 1994

The pilot departed Moorabbin with one passenger on board and flew to the designated Moorabbin aerobatic training area with the probable intention of practising aerobatic manoeuvres. The pilot was approved to perform aerobatic manoeuvres down to 500 feet. The passenger was an experienced flying instructor who also held an approval for low level aerobatics down to 500 feet, but he was not experienced on the Pitts S2A aircraft.

Only one known witness saw the aircraft in the last few seconds before impact. Her attention was attracted to the aircraft by its loud engine noise. She briefly observed the aircraft performing an aerobatic manoeuvre while descending towards the ground at an angle of about 45 degrees. The aircraft was travelling in a westerly direction when it disappeared behind a row of Cyprus trees and impacted the ground about 300 metres north west of the her location. Subsequently the witness was shown a video of Pitts aircraft performing various aerobatic manoeuvres. The manoeuvre she identified as what she saw VH-SZA perform was a descending snap roll to the left.

Airframe and engine damage indicated that the aircraft was rotating to the left when it impacted the ground in a steep nose down attitude. Propeller damage indicated that the engine was at a low power setting at impact. No fault has been detected with the engine.

The right rudder cable attachment to the rudder horn was found to have pulled out of the Nicopress copper sleeve/swage thereby disconnecting the right rudder cable from the rudder. A similar disconnect was found with the left rudder cable at the pilot-in-command's left pedal. It was determined that the correct copper sleeves were used on the correct one eighth inch diameter rudder cables but that the swaging had been carried out with the Nicopress jaws that were appropriate for a five thirty second inch cable. Four Nicopress copper sleeves were underswaged. Specialist examination subsequently concluded that the improperly constructed rudder cables probably failed at impact and not in flight.

The reason why the two pilots failed to recover the aircraft from an aerobatic manoeuvre could not be determined.

Significant Factor

The following factor was considered relevant to the development of the accident:

1. The aircraft was engaged in low level aerobatics and struck the ground for undetermined reasons.