

**Aviation Safety Investigation Report
199500906**

**Intreprinderea De Constructii
Aeronautice
IS-28B2**

25 March 1995

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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: 199500906 **Occurrence Type:** Accident
Location: Lockhart
State: NSW **Inv Category:** 3
Date: Saturday 25 March 1995
Time: 1614 hours **Time Zone** EST
Highest Injury Level: Fatal
Injuries:

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

Aircraft Manufacturer: Intreprinderea De Constructii Aeronautice
Aircraft Model: IS-28B2
Aircraft Registration: VH-GAJ **Serial Number:** 04/1975
Type of Operation: Non-commercial Pleasure/Travel
Damage to Aircraft: Destroyed
Departure Point: Lockhart NSW
Departure Time: 1613 EST
Destination: Lockhart NSW

Crew Details:

Role	Class of Licence	Hours on	
		Type	Hours Total
Pilot-In-Command	None	18.0	153

Approved for Release: Wednesday, June 12, 1996

FACTUAL INFORMATION

The glider, flown by an Air Experience Instructor, was winch launched from the airstrip into the west. Wind conditions were almost calm and the outside air temperature was about 23 degrees Celsius. The initial climb was normal. At about 300 ft above ground level (AGL) the cable broke at the winch end. The pilot took recovery action and released the broken cable. The recovery action appeared to be successful. Although sufficient strip remained for a safe landing straight ahead, the pilot turned left onto what appeared to be a low and close downwind leg of a modified circuit. The glider entered a spin off an attempted turn in the base/final area from about 200 ft. It impacted the ground in a vertical, nose-down attitude.

Witnesses advised that the glider did not climb too steeply during the launch. When the cable broke, club members expected the pilot to lower the nose and land ahead, as he had been observed to do successfully on previous occasions. There was surprise when the glider turned and entered a modified circuit. However, experienced glider pilots agreed that it was possible to have flown a left circuit and achieved a safe landing onto the strip into the west after a cable break at 300 ft.

The glider was being flown within its approved centre of gravity and weight limits, with the pilot occupying the front seat and a lightweight passenger in the back.

ANALYSIS

It is not known if the energy level of the glider was satisfactorily restored after the cable break. It is possible that the airspeed was low all the way around the modified circuit until it dissipated to the point where the glider entered a spin. The IS28B2 will lose about 400 ft per turn in a spin and adopts a vertical, nose down attitude in the first half turn.

The broken winch cable was range two spring steel, as recommended by the Gliding Federation of Australia (GFA). The winch driver reported that the cable must have broken at a kink rather than at a previous join, as tends to happen, because the broken remains did not include a knot from a previous join.

The glider was subsequently inspected by an experienced GFA airworthiness inspector. No fault was found which may have contributed to the accident.

CONCLUSIONS

Findings

1. The winch cable was range two spring steel, as recommended by the GFA.
2. The winch cable broke when the glider was at about 300 ft AGL.
3. The airstrip was long enough for the pilot to land safely straight ahead after the cable break.
4. The aircraft entered what appeared to be a close left circuit after the cable break.
5. The glider entered a spin from about 200 ft AGL off a low level left turn in the base/final area.
6. The pilot was trained and experienced at handling winch cable breaks.
7. The glider was serviceable immediately prior to the accident.

Significant Factors

1. The pilot failed to maintain sufficient airspeed during the low level left turn.
2. The glider entered a spin at a height insufficient to effect recovery.

SAFETY ACTION

Gliding Federation of Australia

The Lockhart accident was the third fatal accident to winch-launched gliders in the previous three months. Since this accident, the GFA has issued Operations Directive 1/95 - 'Winch Failure Training' which re-emphasises the GFA requirement for 'live' launch failure training, the first priority to maintain safe airspeed, at least 1.5Vs (1.5 times the stall speed) and the importance of landing straight ahead after a cable break in preference to turning.

The GFA has issued Operations Directive 2/95 - 'Low Speed Loss of Control' because the common factor in the recent fatal glider accidents was that the pilots lost control of their gliders at too low a height to allow recovery. Directive 2/95 re-emphasises that pilots must be aware of the symptoms of an impending spin and that spin recovery is not achievable if the glider is too low.

The GFA has organised a series of Flight Safety Seminars to be held in VIC/TAS, NSW, QLD, SA/NT and WA in 1995. These seminars are targeted at chief flying instructors but other interested persons are invited to actively participate. Launch failure training and low speed loss of control (stall and spin) training are amongst the topics for discussion during the seminars.

GFA RECOMMENDATIONS

The GFA has made the following recommendations to its members:

"As well as spin training in accordance with normal practice, particular attention is drawn to pages 36 and 37 Part 2 of the Instructor Handbook, Spin Awareness and Common Symptoms. These sections highlight the practicalities of making a pilot aware that a glider is about to spin. They are intended to supplement the training sequences, not replace them. It is recommended that these pages are photocopied and placed in the club magazine and/or in a prominent place on the pie-cart or the clubhouse notice board.

One further tip may help. It takes a certain period of time for the mishandled turn to degenerate into a spin. The time taken depends on the energy of the glider on turn entry and the degree of misuse of the rudder. Although coordinated flying combined with safe speed near the ground is the only certain answer, an added element of safety when under 1000 ft agl may be provided by planning to limit changes of direction to 90 degrees or less. This will not eliminate the possibility of a spin but, combined with a minimum of 1.5Vs, will greatly reduce the likelihood of it occurring in the case of a pilot who, under stress, unwittingly uses excessive rudder, a surprisingly common error."