

Aviation safety investigations & reports

Ted Smith Aerostar Corp. 601, VH-WRF

Investigation number:

200400242

Status: Completed



The Ted Smith Aerostar 601 aircraft, registered VH-WRF, departed Coolangatta at 1301 ESuT with a flight instructor and a commercial pilot on board. The aircraft was being operated on a dual training flight in the Byron Bay area, approximately 55 km south-south-east of Coolangatta. The aircraft was operating outside controlled airspace and was not being monitored by air traffic control. The weather in the area was fine with a south-easterly wind at 10 - 12 kts, with scattered cloud in the area with a base of between 2,000 and 2,500 ft.

The purpose of the flight was to introduce the commercial pilot, who was undertaking initial multi-engine training, to asymmetric flight. At approximately 1445, the operator advised Australian Search and Rescue that the aircraft had not returned to Coolangatta, and that it was overdue. Recorded radar information by Airservices Australia revealed that the aircraft had disappeared from radar coverage at 1335. Its position at that time was approximately 18 km east-south-east of Cape Byron. Search vessels later recovered items that were identified as being from the aircraft in the vicinity of the last recorded position of the aircraft. Those items included aircraft checklist pages, a blanket, a seat cushion from the cabin, as well as a number of small pieces of cabin insulation material. No item showed any evidence of heat or fire damage. No further trace of the aircraft was found.

Air traffic control received normal radio transmissions from the aircraft during the departure from Coolangatta and the transit to the operating area. No other transmissions from the aircraft were received. In particular, there were no radio transmissions from the aircraft around 1335.

The instructor was the chief flying instructor of the organisation that owned the aircraft. He held a Grade 1 flight instructor rating. He had extensive civilian and military experience as a pilot and flight instructor, most of which was on single-engine fixed and rotary wing aircraft. At the time of the accident, his total flying experience was 7127.2 hours, with 447.7 hours on multi-engine aircraft. The instructor had accrued 294 hours on Aerostar aircraft of which 194 were as a flying instructor.

The student pilot held a commercial pilot's license and had about 283 hours flying experience at the time of the accident. He commenced flying training on 23 April 2001 on a Mooney M20J aircraft, and first flew solo on 23 July 2001, after 38.3 hours dual instruction. On 21 December 2002, he gained an unrestricted private pilot's license, having flown a total of 181.1 hours. On 19 September 2003, with a total flying experience of 257 hours, the student pilot failed his first commercial pilots license test. On 17 October 2003, he passed the second attempt with a total flight time of 276.9 hours. Excluding the accident flight, the commercial pilot's flight time on Aerostar aircraft was 3.5 hours.

The accident flight was the commercial pilot's fourth in the Aerostar aircraft, and was the third flying exercise sequence in the operator's multi-engine training syllabus. The objectives of the exercise included controlling the aircraft after the failure of an engine, recovering from a stall in the takeoff configuration, and entering and recovering from a minimum control speed (V_{mca}) situation. (V_{mca} is the minimum control speed in flight with one engine inoperative.)

Recorded radar data for the flight showed that the aircraft proceeded from Coolangatta to the east of Byron Bay where it conducted a series of manoeuvres in an area approximately 18 km square, at between 2,500 and 3,000 ft, with occasional brief excursions below 2,500 ft. Between 1313:00 and 1328:00 ESuT, there were three instances, about 4 minutes apart, where the recorded groundspeed of the aircraft decreased rapidly from approximately 150 kts to between 100 and 110 kts before increasing again. Each speed reduction was accompanied by an altitude loss of 200 - 400 ft. Between 1328:40 and 1329:05, the groundspeed decreased from 140 to 118 kts. It then fluctuated between 121 and 112 kts for the next 1 minute and 25 seconds while the recorded altitude reduced from 2,600 to about 1,900 ft. The recorded altitude and ground speed then steadily increased for the next 3 minutes to a maximum of 2,800 ft and 123 kts respectively. During the next 60 seconds, the recorded altitude reduced to 2,500 ft while the groundspeed decreased to 110 kts at 1335:00. At 1335:29, the recorded altitude was 2,600 ft and the groundspeed 108 kts. The last valid radar data was at 1335:37 when the recorded altitude was 2,100 ft, and the groundspeed was 100 kts. The aircraft was tracking in a south-easterly direction from about 1331 until radar contact was lost. There were no sudden or significant changes in the recorded track during that period.

The aircraft was being operated on a valid maintenance release and there were no maintenance items outstanding at the time of the accident. The aircraft was flown from Coolangatta to Sydney and return on the night before the accident and was reported to have operated normally during those flights. The aircraft was not fitted with a stall warning system.

Without the aircraft wreckage or more detailed information regarding the behaviour of the aircraft in the final stages of the flight, there was insufficient information available to allow any conclusion to be drawn about the development of the accident. Many possible explanations exist.

The fact that no radio transmission was received from the aircraft around the time radar contact was lost could indicate that the aircraft was involved in a sudden or unexpected event at that time that prevented the crew from operating the radio.

The speed regime of the aircraft during the last recorded data points indicated that airframe failure due to aerodynamic overload was unlikely.

The nature of the items from the aircraft that were recovered from the ocean surface indicated that the aircraft cabin had been ruptured during the accident sequence.

General details

Date:	27 January 2004	Investigation status:	Completed
Time:	1326 hours ESuT		
Location (show map):	19 km E Byron Bay		
State:	New South Wales	Occurrence type:	Collision with terrain

Release date:	20 July 2004	Occurrence category:	Accident
Report status:	Final	Highest injury level:	Fatal

Aircraft details

Aircraft manufacturer	Ted Smith Aerostar Corp.
Aircraft model	601
Aircraft registration	VH-WRF
Serial number	61-0497-128
Type of operation	Flying Training
Damage to aircraft	Unknown
Departure point	Coolangatta, QLD
Departure time	1301 hours ESuT
Destination	Coolangatta, QLD

Crew details

Role	Class of licence	Hours on type	Hours total
Pilot-in-Command	Commercial	308.0	7127
Unknown	Commercial	3.5	283

Injuries

	Crew	Passenger	Ground	Total
Fatal:	2	0	0	2
Total:	2	0	0	2

Last update 13 May 2014