



Australian Government

Australian Transport Safety Bureau

Wirestrike involving an Ayres Thrush S2R-T34, VH-HAH

7 km SE of Condobolin aerodrome, NSW, 19 February 2013

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Addendum

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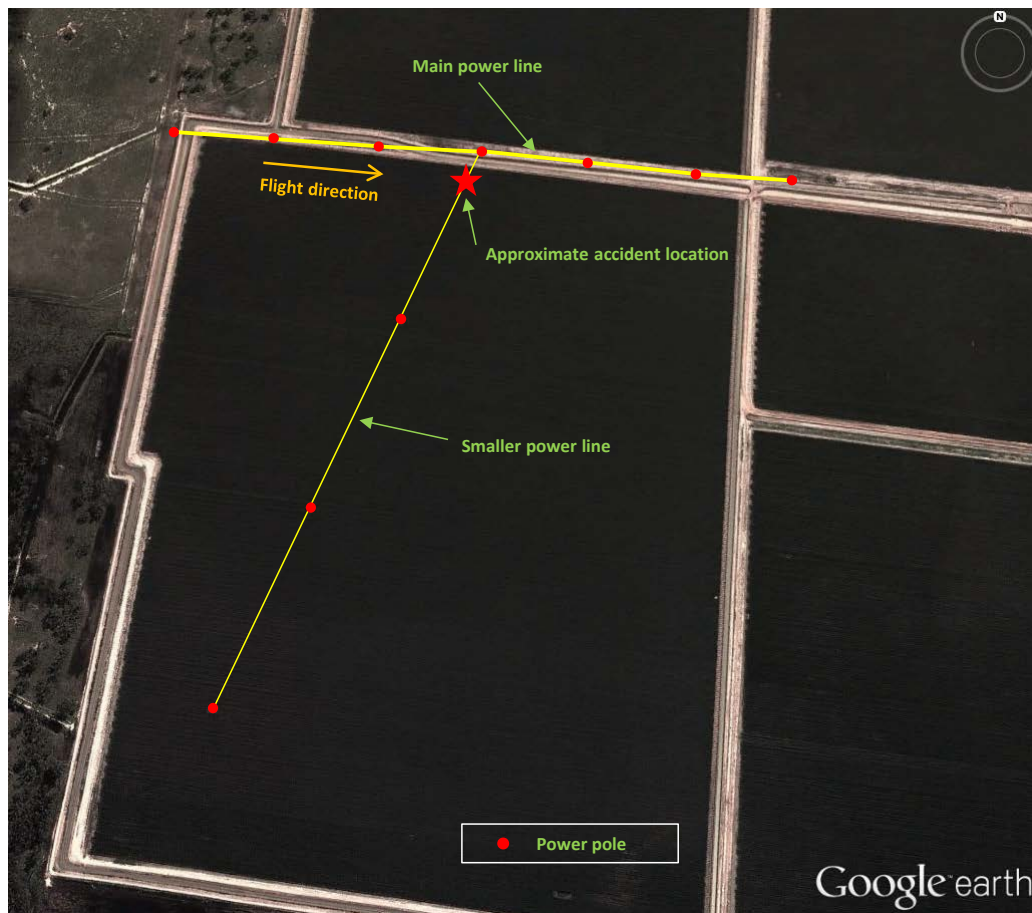
Wirestrike involving an Ayres Thrush S2R-T34, VH-HAH

What happened

On 19 February 2013, at about 1000 Eastern Daylight-saving Time,¹ an Ayres Thrush S2R-T34 aircraft, registered VH-HAH (HAH), struck power lines while conducting aerial agricultural spraying operations, about 7 km south-east of Condobolin aerodrome, New South Wales. The pilot was the only person on board.

The pilot was carrying out the final spray run (clean-up run), to use the last of the spray product on the edge of the field, before returning to the loading airstrip that was located about 1 km away. The pilot was flying from west to east, parallel to the main power line (Figure 1), which was located beside the field, outside of the area being sprayed. Another smaller power line with three wires ran diagonally across the field from the main power line and went for about 1 km across the field to a farm yard. When the pilot had run out of product, he pulled up to gain altitude before returning to the loading airstrip, when he struck the smaller power line that ran diagonally across the field. Two of the wires were cut by the aircraft's wire protection system and the third wrapped around the propeller hub, arresting the aircraft and pulling it around in a half circle, where it came to rest on the ground (Figure 2). The aircraft sustained serious damage, while the pilot was uninjured.

Figure 1: Representation of field being sprayed



Source: Google earth

¹ Eastern Daylight-saving Time (EDT) was Coordinated Universal Time (UTC) + 11 hours.

Figure 2: Accident site



Power line wrapped around propeller



Source: NSW Police

Pilot comments

The pilot reported that this was his first day back at work after 6 days off and he had been spraying for about 2 hours prior to the accident. He had sprayed this field six or seven times during the cotton season and was familiar with the field and the power line. The pilot stated that he had discussed spraying the field and the location of the power line with the chief pilot the night before. He had marked the power line on a map in red, and conducted a few circuits as a refresher and to check if there were any new obstacles, before he commenced spraying the field.

The pilot reported that there were cable cutters located on the leading edge of each main landing gear, a cable cutter going up the windscreen, and a deflector cable that went from the cockpit to the top of the vertical stabiliser.

Safety action

Whether or not the ATSB identifies safety issues in the course of an investigation, relevant organisations may proactively initiate safety action in order to reduce their safety risk. The ATSB has been advised by the aircraft operator that arrangements have been made for the electricity distribution company to install a marking system on the power line.

Safety message

The practice within the aerial agricultural industry is to extensively pre-plan an application task that takes into account the specific hazards affecting an application. Any change from the previously planned application runs, including an unplanned change of direction, has the potential to affect a pilot's awareness of the relative position of previously known power lines and other hazards.

For this reason, the Aerial Agricultural Association of Australia recommends that an additional hazard check should be performed from a safe height prior to every change of direction or 'clean up run'. The extra safety check for wires is important, as the obstructions may appear new or different from the new direction of flight.

For further reading of suggested approaches to risk management for Agricultural Pilot please see the *Aerial Application Pilots Manual*, available from the Aerial Agricultural Association of Australia at www.aerialag.com.au/Home.aspx.

In addition, the ATSB released two research reports on wirestrikes in 2011.

AR-2011-028: Wirestrikes involving known wires: A manageable aerial agriculture hazard.

This report is available at www.atsb.gov.au/publications/2011/ar2011028.aspx.

This report covers relevant safety information about factors associated with wirestrikes, involving known wires and strategies to manage them. While most of the strategies should be taken into

account during the entire operation, some of these are most pertinent when there is a change of plans. The information and strategies include:

- Reassessing the risks when things change. Clean-up runs are similar to an unplanned spray run and also require a reconnaissance before commencing.
- Actively looking for and reminding yourself of wires. Remind yourself of the position of the wires at the top of every turn, and actively look for wires when flying the spray run.
- Vigilance limitations, the chance of detecting hazards, and the time taken to detect hazards, will decrease greatly after the first 30 minutes of many aerial spraying tasks. In addition, defences are often lowered at the end of a job and pilots may start to think about the next job or the impending break.
- Wire markings can enhance the visibility of wires.

AR-2011-004: Under reporting of aviation wirestrikes.

This report is available at www.atsb.gov.au/publications/2011/ar2011004.aspx.

This publication contains a section on current initiatives to reduce aviation wirestrikes. One such initiative is the formation of a working group from the relevant government agencies to examine ways to establish an electronic terrain and obstacle database (eTOD). The final regulatory requirements in relation to eTOD will form part of the provisions of a new Part 175 of the Civil Aviation Safety Regulations covering aeronautical information services currently being prepared by the Civil Aviation Safety Authority (CASA) in consultation with the Office of Parliamentary Counsel.

General details

Manufacturer and model:	Ayres Thrush S2R-T34	
Registration:	VH-HAH	
Type of operation:	Aerial work – aerial agriculture	
Occurrence category:	Accident	
Primary occurrence type:	Wirestrike	
Location:	7 km SE of Condobolin aerodrome, New South Wales	
	Latitude: 33° 05.865' S	Longitude: 147° 15.546' E
Persons on board:	Crew – 1	Passengers – Nil
Injuries:	Crew – Nil	Passengers – Nil
Damage:	Serious	

About the ATSB

The Australian Transport Safety Bureau (ATSB) is an independent Commonwealth Government statutory agency. The Bureau is governed by a Commission and is entirely separate from transport regulators, policy makers and service providers. The ATSB's function is to improve safety and public confidence in the aviation, marine and rail modes of transport through excellence in: independent investigation of transport accidents and other safety occurrences; safety data recording, analysis and research; and fostering safety awareness, knowledge and action.

The ATSB is responsible for investigating accidents and other transport safety matters involving civil aviation, marine and rail operations in Australia that fall within Commonwealth jurisdiction, as well as participating in overseas investigations involving Australian registered aircraft and ships. A primary concern is the safety of commercial transport, with particular regard to fare-paying passenger operations.

The ATSB performs its functions in accordance with the provisions of the *Transport Safety Investigation Act 2003* and Regulations and, where applicable, relevant international agreements.

The object of a safety investigation is to identify and reduce safety-related risk. ATSB investigations determine and communicate the safety factors related to the transport safety matter being investigated.

It is not a function of the ATSB to apportion blame or determine liability. At the same time, an investigation report must include factual material of sufficient weight to support the analysis and findings. At all times the ATSB endeavours to balance the use of material that could imply adverse comment with the need to properly explain what happened, and why, in a fair and unbiased manner.

About this report

Decisions regarding whether to conduct an investigation, and the scope of an investigation, are based on many factors, including the level of safety benefit likely to be obtained from an investigation. For this occurrence, a limited-scope, fact-gathering investigation was conducted in order to produce a short summary report, and allow for greater industry awareness of potential safety issues and possible safety actions.