



**Australian Government**

**Australian Transport Safety Bureau**

# Weather related precautionary landing involving a Piper PA-28, VH-MSG

20 km NE of Hamilton, Victoria, 13 April 2013

**ATSB Transport Safety Report**  
Aviation Occurrence Investigation  
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#### **Addendum**

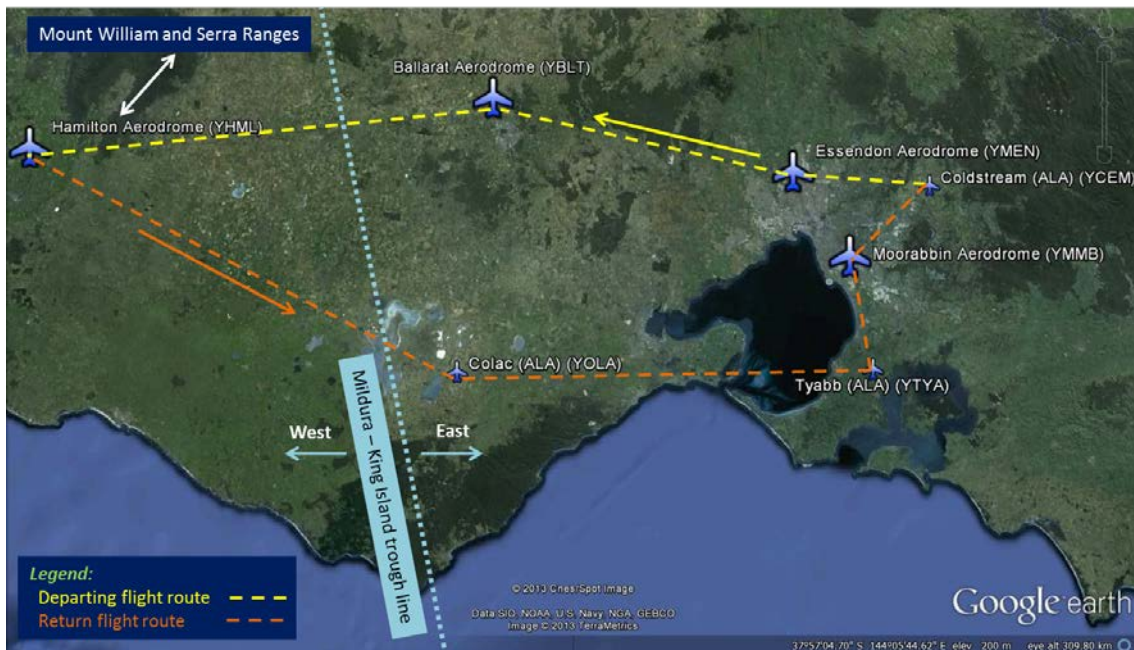
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# Weather related precautionary landing involving a Piper a PA-28, VH-MSG

## What happened

On 13 April 2013, a student pilot of a Piper PA-28 aircraft, registered VH-MSG, was preparing for a navigation training flight from Coldstream, Victoria and return, operating under the visual flight rules (VFR). The planned flight route was from Coldstream to Essendon, Ballarat, Hamilton and return via Colac, Tyabb and Moorabbin (Figure 1).

Figure 1: Planned flight route



Source: Google earth

In preparation for the flight, the pilot obtained the weather forecasts for the planned route, including Hamilton. The pilot reported that strong winds and turbulence was expected, and a trough was forecast to pass through the Hamilton area after his planned departure time from Hamilton. Overall, the pilot determined that the weather conditions were suitable for the flight, which was verified by his flight instructor.

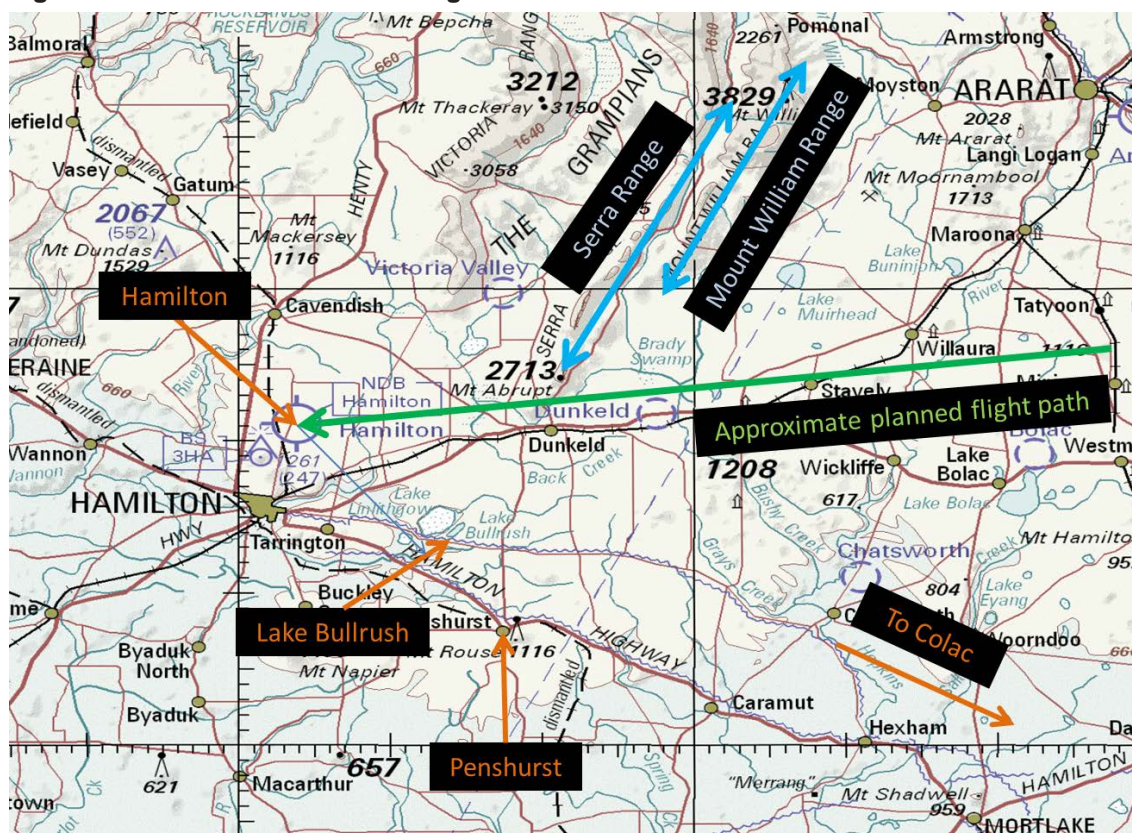
The aircraft departed Coldstream at about 1030-1100 Eastern Standard Time.<sup>1</sup> The pilot reported that a stronger than forecast headwind was experienced, which resulted in the aircraft's ground speed being about 20 kt slower than planned and a subsequent increase in flight time. The aircraft flew overhead Ballarat and tracked for Hamilton, maintaining 6,500 ft. At that time, the pilot stated that the cloud base was at 12,000 ft and visibility was greater than 30 km.

When approaching the Mount William and Serra Ranges, the pilot observed low cloud ahead, and experienced rain showers and moderate turbulence. The pilot diverted 45° to the left and tracked

<sup>1</sup> Eastern Standard Time (EST) was Coordinated Universal Time (UTC) + 10 hours.

towards Penshurst, with the intent of tracking to Hamilton from the south-east (Figure 2). At about the same time, the pilot commenced a descent.

**Figure 2: Hamilton and surrounding area**



Source: Airservices Australia

When about 10 NM from Hamilton, the pilot broadcast an inbound call on the Hamilton common traffic advisory frequency (CTAF).

Overhead Lake Bullrush, the pilot was confronted with a ‘wall of cloud’. The pilot determined that he would not be able to land at Hamilton and commenced tracking for Colac. Shortly after, he received a call on the CTAF from persons on the ground (ground personnel)<sup>2</sup> at Hamilton aerodrome. The pilot informed them that he was diverting to Colac.

The ground personnel advised the pilot that the weather had improved and suggested that he could fly to the south of the Ranges and then track west to the aerodrome. The pilot turned the aircraft around and commenced tracking towards the Ranges. Soon after, the pilot realised that the conditions had not improved and he descended to 1,800 ft. As a precaution, the pilot commenced looking for a suitable landing location and identified a road.

The ground personnel continued talking to the pilot and suggested he attempt to land at Hamilton. However, as the pilot could not see the aerodrome and the weather had closed in around him, he elected to conduct a precautionary search and landing onto the road. The pilot advised the ground personnel that he would contact them after landing.

The pilot overflew the road on two occasions to inspect the area for obstructions. He observed a power pole, but did not see any powerlines. He elected to land further along the road as a precaution.

<sup>2</sup> The pilot reported that the ground personnel were also pilots, with varying experience.

The ground personnel continued talking to the pilot on the radio, which became a distraction. He turned the radio off so he could focus on the landing. Soon after, at about 1430, the aircraft landed on the road (Figure 3).

The pilot reported that the actual headwinds experienced on the flight were stronger than that forecast, which resulted in a reduced ground speed and increased flight time. He estimated that his actual arrival time at Hamilton was 1 hour or more after his planned arrival time. It was likely that the forecast trough was passing through the area at that time.

**Figure 3: VH-MSG after landing (left) and moved off the road shortly after (right)**



Source: Pilot

### ***Pilot comments***

The pilot provided the following comments regarding the incident:

- he recognised that you would normally broadcast a ‘PAN PAN’<sup>3</sup> call on the Melbourne Centre frequency in such a situation to advise air traffic control of the situation, however, he was busy formulating a plan and focusing on landing
- be cautious when receiving advice from persons on the ground
- if faced with a similar situation again, he would divert at an earlier stage in the flight.

### ***Meteorological information***

#### **Area forecast (ARFOR)**

In order to facilitate the provision of aviation weather forecasts by the Bureau of Meteorology (BoM), Australia is divided into a number of forecast areas. Hamilton aerodrome was located within Area 30. The Area 30 ARFOR, valid from 0900 to 2100 on 13 April 2013 included:

- at 1500, a trough to west, extending from Mildura, Victoria to King Island, Tasmania was expected (Figure 1)
- low cloud patches west of the trough, mainly associated with showers
- patches of broken<sup>4</sup> stratus cloud between 1,000 ft and 3,000 ft to the west of the trough, mainly associated with rain showers

<sup>3</sup> An internationally recognised radio call announcing an urgency condition which concerns the safety of an aircraft or its occupants but where the flight crew does not require immediate assistance.

- the winds for the flight, to the east of the trough, were 330° (True) at 35 kt at 5,000 ft and 320° (True) at 35 kt at 7,000 ft.

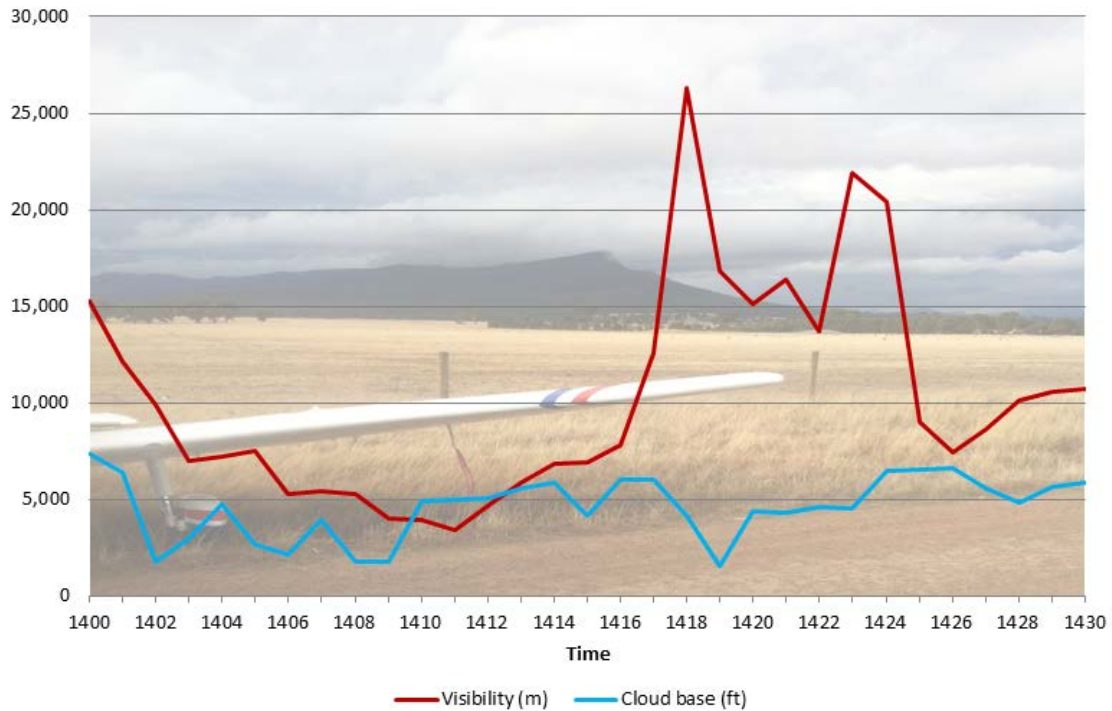
**Aerodrome special weather reports (SPECI)<sup>5</sup>**

The BoM automatic weather station (AWS) located at Hamilton aerodrome generated aerodrome weather reports. The following SPECI reports were issued:

- At 1406: indicated that the wind was 280° (True) at 18 kt gusting to 31 kt; visibility was greater than 10 km, scattered cloud at 2,200 ft, broken cloud at 3,300 ft, and overcast cloud at 7,700 ft.
- At 1412: indicated that the wind was 280° (True) at 20 kt gusting to 31 kt; visibility was 5,000 m, scattered cloud at 1,800 ft, broken cloud at 3,500 ft, and overcast cloud at 5,100 ft.
- At 1429: indicated that the wind was 300° (True) at 19 kt, visibility was greater than 10 km, scattered cloud at 1,700 ft, broken cloud at 4,400 ft, and overcast cloud at 6,000 ft.

The BoM also provided the ATSB with one-minute interval data recorded by the AWS. A graphical depiction of the visibility (m) and cloud base (ft) between 1400 and 1430 is shown in Figure 4.

**Figure 4: Bureau of Meteorology one-minute data**



Source: Bureau of Meteorology

**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 of the following proactive safety action in response to this occurrence.

<sup>4</sup> Cloud cover is reported using expressions that denote the extent of the cover. The expression Few indicates that up to a quarter of the sky was covered, Scattered indicates that cloud was covering between a quarter and a half of the sky. Broken indicates that more than half to almost all the sky was covered, while Overcast means all the sky was covered.

<sup>5</sup> A special weather report used to identify when conditions are below specified levels of visibility and cloud base; when certain weather phenomena are present; and when temperature, pressure or wind change by defined amounts..

## **Aircraft operator**

As a result of this occurrence, the aircraft operator has advised the ATSB that they are considering incorporating into their operations manual, minimum weather criteria for student pilots conducting solo navigation flights. These criteria would exceed the visual meteorological conditions (VMC) minima and the VFR alternate aerodrome requirements stipulated in the Aeronautical Information Publication (AIP)<sup>6</sup>, and also include a minimum time buffer on forecast changes to non-VMC.

## **Safety message**

Weather does not stay constant, and may not behave in a manner consistent with the forecast conditions. It can deteriorate rapidly. When the actual conditions differ from that forecast, pilots need to consider the impact this may have on the planned flight. They need to continually assess the weather enroute and lookout for deteriorating conditions behind, around, and ahead of you. Make decisions early and when in doubt, turn about. The European Aviation Safety Agency (EASA) recognises that, if you turn back when the weather conditions ahead seem poor, it does not mean you are a bad pilot. It shows you have good judgement and assess situations realistically.

It is also important to be aware that the presence of others may influence your decision-making process. The EASA notes that pilots who fly in marginal weather conditions may have more skill than others, have better equipment, or might be willing to accept more risk. Their apparent ability does not mean that others can safely achieve the same outcome. Succeeding in a difficult situation depends on many other factors, which observers cannot see. To be competent, pilots must know, and fly within their own personal limitations on that particular occasion.

The following provide additional information on operations in marginal weather conditions:



- ATSB SafetyWatch – General Aviation, reduced visibility: [www.atsb.gov.au/safetywatch/ga-pilots.aspx](http://www.atsb.gov.au/safetywatch/ga-pilots.aspx)
- Avoidable Accidents No. 4 – Accidents involving Visual Flight Rules pilots in Instrument Meteorological Conditions: [www.atsb.gov.au/publications/2011/avoidable-4-ar-2011-050.aspx](http://www.atsb.gov.au/publications/2011/avoidable-4-ar-2011-050.aspx)
- General Aviation Pilot Behaviours in the Face of Adverse Weather: [www.atsb.gov.au/publications/2005/pilot\\_behaviours\\_adverse\\_weather.aspx](http://www.atsb.gov.au/publications/2005/pilot_behaviours_adverse_weather.aspx)
- Decision making for general aviation pilots: [easa.europa.eu/essi/egast/2011/04/decision-making/](http://easa.europa.eu/essi/egast/2011/04/decision-making/)
- General Aviation Pilot's Guide to Preflight Weather Planning, Weather Self-Briefings, and Weather Decision Making: [www.faa.gov/pilots/safety/media/ga\\_weather\\_decision\\_making.pdf](http://www.faa.gov/pilots/safety/media/ga_weather_decision_making.pdf)
- 'Weather to fly' DVD available from the Civil Aviation Safety Authority's website at [casa.cart.net.au/store/weather-to-fly-revised-2011.html](http://casa.cart.net.au/store/weather-to-fly-revised-2011.html)

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<sup>6</sup> AIP ENR 1.2 paragraph 2 and ENR 1.1 paragraph 58.2.13.

## General details

Manufacturer and model:	Piper Aircraft Corporation PA-28-151	
Registration:	VH-MSG	
Type of operation:	Flying training - solo	
Occurrence category:	Serious incident	
Primary occurrence type:	Weather related	
Location:	20 km NE of Hamilton aerodrome, Victoria	
	Latitude: 37° 33.224' S	Longitude: 142° 11.495' E
Persons on board:	Crew – 1	Passengers – Nil
Injuries:	Crew – Nil	Passengers – Nil
Damage:	Nil	

## 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.