



Australian Government

Australian Transport Safety Bureau

Runway overrun involving Gippsland Aeronautics GA-8, VH-WSB

East Wallabi Island, Western Australia on 26 December 2021

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Addendum

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Safety summary

What happened

On the morning of 26 December 2021, the pilot of a Geraldton Air Charter, Gippsland Aeronautics GA-8 Airvan prepared for an air-transport flight from Geraldton, Western Australia to East Wallabi Island. During the preparations, the pilot decided to carry an additional passenger from another flight, which was also scheduled to depart for East Wallabi Island. The pilot later reported that the rearrangement of the passengers resulted in the preparations for the flight being rushed.

Earlier in the day, the pilot had operated a flight in a Cessna 172 with an emergency position indicating radio beacon (EPIRB) positioned on their right hip. The pilot was aware that this would obstruct the flap lever in the Airvan and intended to move the EPIRB to their left hip prior to the East Wallabi flight, but during the rushed preparations, forgot to move it.

As the aircraft approached East Wallabi Island, the pilot attempted to select full flap for the landing, but the EPIRB obstructed the flap lever movement and prevented it from locking into the full flap position. Multiple further attempts to select full flap were unsuccessful, and the approach was continued with only the first stage of flap extended.

During the landing flare, the aircraft floated more than the pilot expected and touched down about midway along the runway (about 350 m from the end of the runway). After touch down the pilot applied normal braking but, as the aircraft approached the end of the runway, they realised an overrun was imminent and applied maximum braking. Despite that, the aircraft did not stop on the runway and overran it by about 15 m. The pilot and passengers were not injured, and the aircraft was substantially damaged in the accident.

What the ATSB found

The ATSB found that an emergency position indicating radio beacon worn by the pilot prevented the selection of full flap. The pilot possibly did not comprehend the effect of the reduced flap setting and continued the approach with the inappropriate flap setting.

During the subsequent landing, the aircraft floated significantly beyond the intended landing point. The pilot did not recognise the risk of a runway overrun and did not conduct a go around or apply sufficient braking to stop the aircraft on the remaining runway.

What has been done as a result

Following the accident, the operator modified their operating procedures to recommend that a process of threat and error management be conducted before all flights.

Safety message

This accident emphasises the need for careful flight preparation. Taking time to confirm that all required actions have been completed prior to departure minimises the chance of in-flight complications. To ensure effective flight preparation, the Civil Aviation Safety Authority publication: [Visual Flight Rules Guide](#) advises pilots to 'give yourself time to review information free from distractions when making pre-flight decisions...avoid flying under time pressure'.

It also underlines the importance of commencing a missed approach early when the approach and landing deviate from the plan and a safe landing cannot be assured.

The Civil Aviation Authority of New Zealand publication: [Good Aviation Practice, Mountain Flying](#) recommends that pilots 'always have a clearly defined decision point where you can go-around if you are not happy that a safe landing is achievable.' This is especially relevant for operations involving short runways.

The investigation

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 investigation was conducted in order to produce a short investigation report, and allow for greater industry awareness of findings that affect safety and potential learning opportunities.

The occurrence

On the morning of 26 December 2021, the pilot of a Geraldton Air Charter, Gippsland Aeronautics GA-8 Airvan prepared for an air-transport¹ flight from Geraldton, Western Australia to East Wallabi Island. The flight was planned to carry 6 passengers.

While preparing for the flight, the pilot decided to carry an additional passenger from another flight, which was also scheduled to depart for East Wallabi Island. The pilot later reported that the rearrangement of the passengers resulted in the preparations for the flight being rushed.

Earlier in the day, the pilot had operated a flight in a Cessna 172 with an emergency position indicating radio beacon (EPIRB) positioned on their right hip. The pilot was aware that this would obstruct the flap lever in the Airvan and intended to move the EPIRB to their left hip prior to the East Wallabi flight, but during the rushed preparations, forgot to move it.

At about 1030 Western Standard Time,² the flight departed for East Wallabi Island with the pilot and 7 passengers on board (Figure 1).

As the aircraft approached the Island, the pilot positioned the aircraft to join the right base leg of the circuit for runway 36, extended the first stage of flap and observed the windssock indicating a northerly wind.

Figure 1: Flight overview



¹ The flight was operated under Civil Aviation Safety Regulations Part 135 (Air transport operations - smaller aeroplanes).

² Western Standard Time (WST): Universal Coordinated Time (UTC) + 8 hours.

Source: Google Earth, annotated by ATSB

The pilot turned onto the final leg of the circuit and attempted to select full flap for the landing, but the EPIRB obstructed the flap lever movement and prevented it from locking into the full flap position. Multiple further attempts to select full flap were unsuccessful, and the approach was continued with only the first stage of flap extended.

Runway 36 was 667 m long with a slight downslope. The pilot aimed to touch down in the turnaround area of the runway (Figure 2). As the aircraft crossed the runway threshold at about 70 knots, the pilot reduced engine power to idle and flared³ the aircraft. During the flare, the aircraft floated more than the pilot expected and touched down near the parking area about midway along the runway (about 350 m from the end of the runway).

Figure 2: East Wallabi Island airstrip



³ Flare: the final nose-up pitch of a landing aeroplane used to reduce the rate of descent to about zero at touchdown.

Source: Google Earth, annotated by ATSB

After touch down, the pilot followed the operator’s normal practice of retracting the flaps and then applied normal braking. As the aircraft approached the end of the runway, the pilot realised an overrun was imminent, and applied maximum braking. Despite that, the aircraft overran the runway by about 15 m (Figure 3). The pilot and passengers were not injured, however the aircraft was substantially damaged, including detachment of a main landing gear leg.

Figure 3: VH-WSB after the runway excursion



Source: Operator

Aircraft wing flaps

The Airvan is fitted with manually operated wing flaps with three, selectable positions: retracted, first stage (14° down) and full (38° down). The position of the flaps is determined by notches engaged by the operating lever positioned on the cabin floor to the right of the pilot’s seat. In the retracted and first stage positions, the lever remained below the level of the pilot’s seat bolster. In the full flap position, the lever protruded above the level of the bolster (Figure 4). The aircraft flight manual stated that ‘landings are normally conducted with full flaps’.

Figure 4: Airvan flap lever



Note: The flap lever rests below the pilot seat bolster and is not visible in the retracted and first stage positions (left). The flap lever protrudes above the bolster in the full flap position (right).

Source: Operator

The Civil Aviation Safety Authority publication [Flight Instructor Manual \(Aeroplane\)](#) provides the following information for a landing conducted without flaps which is also applicable (but to a lesser extent) when landing with a flap setting less than full:

The descent path may be flatter, making judgment more difficult...Due to the absence of drag there may be a longer float period.

Landing information

The aircraft departed Geraldton at a calculated take-off weight of about 1,696 kg.⁴ The pilot reported the temperature on East Wallabi Island as 28° C. Using this data and assuming no head or tailwind component, the ATSB calculated that after touching down the aircraft required a landing roll of about 190 m to stop using full flaps (the selected first stage flap position should not have significantly altered that distance).

The United States Federal Aviation Administration publication: [Airplane Flying Handbook, Chapter 9 Approaches and Landings](#) provided the following information for pilots who encounter floating during landing:

The recovery from floating is dependent upon the amount of floating and the effect of any crosswind, as well as the amount of runway remaining. Since prolonged floating utilizes considerable runway length, it must be avoided especially on short runways or in strong crosswinds. If a landing cannot be made on the first third of the runway, or the airplane drifts sideways, execute a go-around.

Operator's investigation

The operator's internal investigation identified that the pilot did not have a full understanding of aircraft drag, effects of flaps, and ground effect. The investigation also noted that the operator's normal practice of retracting flaps immediately after touchdown to maximise brake effectiveness may have led to the pilot prioritising flap retraction ahead of immediately applying braking action.

⁴ The maximum take-off weight of the aircraft was 1,814 kg.

Pilot information

The pilot held a Commercial Pilot Licence (Aeroplane) and had a total flying experience of 1,227.6 hours including 528.3 hours in the Airvan. In the previous 90 days, the pilot had flown 80.6 hours, including 29.7 in the Airvan.

The pilot reported being well rested, but mildly unwell on the day. However, there was no indication that the illness reduced their performance. Similarly, the pilot's general health, fatigue, or distraction were not considered to have contributed to the accident.

Training

The pilot was employed by the operator in July 2019. From that time until November 2019 and again in May 2020 and July 2021, the pilot underwent operator training and proficiency checks that included:

- stabilised approaches
- GA-8 Airvan operations
- East Wallabi Island operations
- short runway landings
- go arounds
- landings

These operator training and checks did not assess the specifics of aircraft drag, effects of flaps or ground effect as they were considered adequately covered during pilot licence testing.

Safety analysis

As the aircraft approached East Wallabi Island, the EPIRB positioned on the pilot's right hip obstructed the flap lever and prevented their locking in the full flap position. The pilot did not consider a go around to allow for trouble shooting or repositioning of the EPIRB and continued the approach with just the first stage of flap extended. That configuration increased the required landing distance compared to the use of full flaps, although there was still sufficient runway length available to land safely.

During the landing flare the reduced drag of the first stage flap setting, possibly combined with a higher than normal approach speed, led to a longer float. While a go around should again have been considered after the aircraft floated significantly beyond the intended landing point, from the touchdown point it was possible to stop the aircraft in the remaining runway using maximum braking. However, possibly due to the priority given to retracting the flaps and the pilot not immediately recognising the risk of an overrun, maximum braking was not applied until insufficient runway remained to prevent the overrun.

Findings

ATSB investigation report findings focus on safety factors (that is, events and conditions that increase risk). Safety factors include 'contributing factors' and 'other factors that increased risk' (that is, factors that did not meet the definition of a contributing factor for this occurrence but were still considered important to include in the report for the purpose of increasing awareness and enhancing safety). In addition 'other findings' may be included to provide important information about topics other than safety factors.

These findings should not be read as apportioning blame or liability to any particular organisation or individual.

From the evidence available, the following findings are made with respect to the runway overrun involving Gippsland Aeronautics GA-8, VH-WSB at East Wallabi Island, Western Australia on 26 December 2021

Contributing factors

- An emergency position indicating radio beacon worn by the pilot prevented the selection of full flap. The reduced flap setting significantly increased the required landing distance.
- During the landing, the aircraft floated significantly beyond the intended landing point. The pilot did not recognise the risk of a runway overrun and did not conduct a go around or apply sufficient braking to stop the aircraft on the remaining runway.

Safety actions

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. All of the directly involved parties are invited to provide submissions to this draft report. As part of that process, each organisation is asked to communicate what safety actions, if any, they have carried out to reduce the risk associated with this type of occurrences in the future. The ATSB has so far been advised of the following proactive safety action in response to this occurrence.

Safety action by Geraldton Air Charter

Following the accident, the operator modified operating procedures to recommend a process of threat and error management be conducted before all flights.

Sources and submissions

Sources of information

The sources of information during the investigation included the:

- aircraft operator
- pilot

References

Civil Aviation Safety Authority 2006, *Flight Instructor Manual Aeroplane*

Civil Aviation Safety Authority 2021, *Visual Flight Rules Guide*

Civil Aviation Authority of New Zealand 2021, *Good Aviation Practice - Mountain Flying*

Federal Aviation Administration of The United States 2021, *Airplane Flying Handbook*

Submissions

Under section 26 of the *Transport Safety Investigation Act 2003*, the ATSB may provide a draft report, on a confidential basis, to any person whom the ATSB considers appropriate. That section allows a person receiving a draft report to make submissions to the ATSB about the draft report.

A draft of this report was provided to the following directly involved parties:

- operator
- pilot

Submissions were received from:

- operator
- pilot

The submissions were reviewed and, where considered appropriate, the text of the report was amended accordingly.

General details

Occurrence details

Date and time:	26 December 2021 – 1100 WST	
Occurrence class:	Accident	
Occurrence categories:	Runway excursion, Incorrect configuration	
Location:	East Wallabi Island, Western Australia	
	Latitude: 28° 26.271' S	Longitude: 113° 44.135' E

Aircraft details

Manufacturer and model:	GIPPSLAND AERONAUTICS GA-8	
Registration:	VH-WSB	
Operator:	Geraldton Air Charter	
Serial number:	GA8-07-125	
Type of operation:	Part 135 Australian air transport operations - smaller aeroplanes	
Activity:	Commercial air transport - Non-scheduled - Passenger transport charters	
Departure:	Geraldton, Western Australia	
Destination:	East Wallabi Island, Western Australia	
Persons on board:	Crew – 1	Passengers – 7
Injuries:	Crew – Nil	Passengers – Nil
Aircraft damage:	Substantial	