Australian Government
Australian Transport Safety Bureau

Collision on ground involving Cessna 172, VH-EWZ, and Cessna 172, VH-SYH

Moorabbin Airport, Victoria, 13 May 2016

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Aviation Occurrence Investigation
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Addendum

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What happened

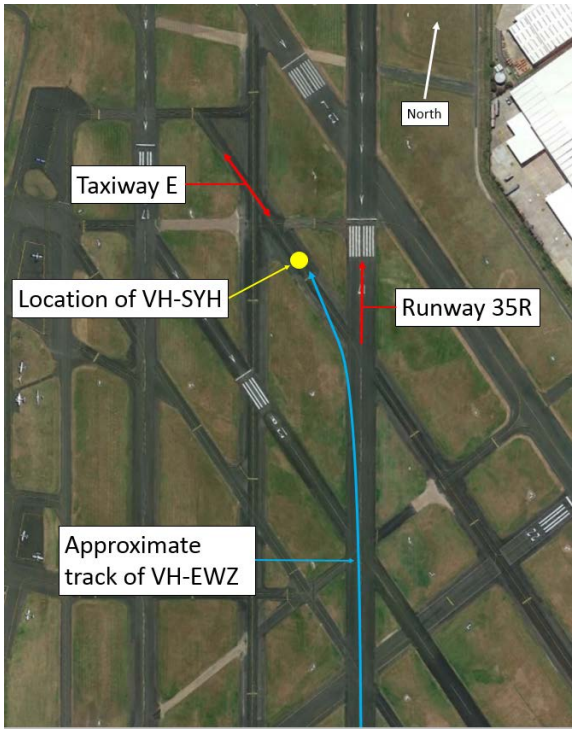
On 13 May 2016, the student pilot of a Cessna 172S aircraft, registered VH-EWZ (EWZ), was conducting solo circuits at Moorabbin Airport, Victoria. The runway in use was runway 35 right (35R), and the wind was west to north-westerly at 10 to 20 kt. At the same time, the pilot of a Cessna 172R aircraft, registered VH-SYH (SYH), was also conducting circuits. SYH was the aircraft immediately ahead of EWZ in the circuit.

The student pilot of EWZ completed eight circuits. During that time, the wind, in particular the crosswind, increased and was subsequently reported as 9 to 15 kt from the left of runway 35R.

At the completion of their circuit training, the pilot of SYH landed and taxied clear of runway 35R, stopping on taxiway E facing north-west (Figure 1). Soon after SYH landed, at about 1059 Eastern Standard Time (EST), EWZ was on the final approach for another touch-and-go landing.[1]

The pilot reported that during the landing, EWZ touched down heavily to the left of the runway centreline.[2] The pilot then applied full power to continue the take-off. As the power increased, the aircraft yawed to the left and ran off the runway. At that time, the pilot of EWZ sighted SYH on the taxiway, reduced the power to idle and applied full right rudder in an effort to avoid SYH.

Figure 1: Moorabbin Airport showing location of collision



Source: Google earth – annotated by ATSB

[1] Touch-and-go landing is a manoeuvre which is common when learning to fly fixed-wing aircraft. It involves landing on a runway and taking off again without coming to a full stop. Usually the pilot then circles the airport in a defined pattern known as a circuit and repeats the manoeuvre. This allows many landings to be completed in a short time.

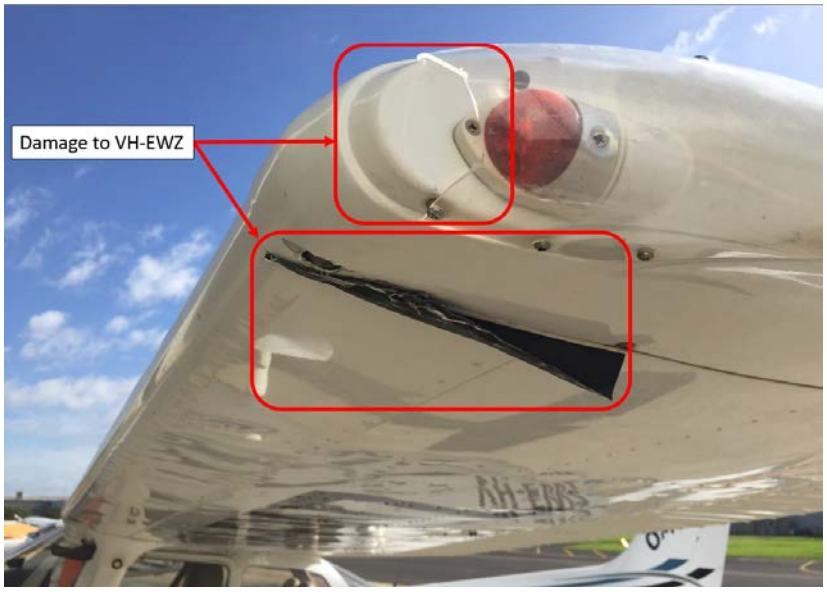
[2] The ATSB obtained recorded data from the incident flight for EWZ. The data showed the aircraft touched down slightly to the right of the runway centreline.

The underside of the left wing of EWZ contacted the top of the right wing of SYH (Figure 2). EWZ came to a stop on the grass to the left of runway 35R. Both aircraft sustained minor damage and the pilots were uninjured (Figure 3).

Figure 2: Damage to right wing of VH-SYH

Source: Aircraft operator

Figure 3: Damage to left wing of VH-EWZ



Source: Aircraft operator

Pilot comments

Pilot of VH-EWZ

The pilot of EWZ provided the following comments:

- In the previous circuits, they had conducted a go-around[3] when they were not comfortable with the approach. On the accident circuit, they assessed that the approach was normal, and elected to continue to land.
- As they applied power to take-off, the aircraft yawed[4] left. They assessed that they may not have applied sufficient rudder input to counter the yaw effect of the increase in power.
- They were using a higher power setting than normal on final approach to maintain the desired approach path due to the crosswind.

Operator comments

Operator of VH-SYH

The operator of VH-SYH provided the following comment:

- In their experience on this aircraft type, yaw induced by crosswind has the potential to be significantly greater than left yaw induced by propeller effects. They suggested that the left yaw induced by the reported crosswind from the left, coupled with not so strong left yaw from propeller effects, combined to create the strong left yaw reportedly experienced.

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 safety action in response to this occurrence.

Operator of VH-EWZ

As a result of this occurrence, the aircraft operator has advised the ATSB that they are taking the following safety actions:

Company instructors have reviewed the landing technique they were using and teaching. A video demonstration of approach and landing technique was recorded, both for staff training purposes and as a training tool.

Safety message

This incident highlights the importance of knowing your own limits. Pilots should use a ‘personal minimums’ checklist to help control and manage flight risks through identifying risk factors including weather conditions that may affect aircraft handling.

This incident also underlines the importance of applying correct technique during all phases of flight, including take-off and landing. The *CAA NZ – Flight Instructor Guide - Crosswind Circuit* provides useful information for crosswind operations.

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[3] A go-around, the procedure for discontinuing an approach to land, is a standard manoeuvre performed when a pilot is not completely satisfied that the requirements for a safe landing have been met. This involves the pilot discontinuing the approach to land and may involve gaining altitude before conducting another approach to land.

[4] Term used to describe the motion of an aircraft about its vertical or normal axis.

General details

Occurrence details

Date and time:	13 May 2016 – 1059 EST	
Occurrence category:	Serious Incident	
Primary occurrence type:	Collision	
Location:	Moorabbin Airport	
	Latitude: 37° 58.55' S	Longitude: 145° 06.13' E

Aircraft details: VH-EWZ

Manufacturer and model:	Cessna Aircraft Company 172	
Registration:	VH-EWZ	
Serial number:	172S10389	
Type of operation:	Flying Training	
Persons on board:	Crew – 1	Passengers – 0
Injuries:	Crew – 0	Passengers – 0
Aircraft damage:	Minor	

Aircraft details: VH-SYH

Manufacturer and model:	Cessna Aircraft Company 172	
Registration:	VH-SYH	
Serial number:	17280356	
Type of operation:	Flying Training	
Persons on board:	Crew – 1	Passengers – 0
Injuries:	Crew – 0	Passengers – 0
Aircraft damage:	Minor	

About the ATSB

The Australian Transport Safety Bureau (ATSB) is an independent Commonwealth Government statutory agency. The ATSB 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 operations involving the travelling public.

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.