Australian Government
Australian Transport Safety Bureau

Wheels-up landing involving a Cessna 172RG, VH-HTP

Elcho Island Aerodrome, Northern Territory, on 14 October 2015

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Aviation Occurrence Investigation
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Addendum

Page	Change	Date

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What happened

On 14 October 2015, the pilot of a Cessna 172RG aircraft, registered VH-HTP (HTP), conducted a private flight from Ramingining to Elcho Island, Northern Territory, with two passengers on board (Figure 1). The aircraft tracked along the coast from Ramingining, at about 1,500 ft above mean sea level.

Figure 1: Ramingining and Elcho Island, Northern Territory

Source: Google earth – annotated by the ATSB

When about 10 NM from Elcho Island, the pilot broadcast an inbound call on the common traffic advisory frequency (CTAF). The flight crew of an aircraft inbound from Darwin also broadcast on the CTAF, with an estimated arrival time about 3 to 5 minutes earlier than HTP.

At about 1050 Central Standard Time (CST), the pilot of HTP manoeuvred the aircraft to make a straight-in approach to runway 10 at Elcho Island aerodrome. When HTP was passing about 1,300 ft on descent, and 3 NM from the runway threshold, the pilot sighted the other aircraft ahead on the runway.

As the pilot of HTP commenced the pre-landing checks, the flight crew of the landed aircraft broadcast that they were backtracking the full length of the runway. The pilot considered whether it was necessary to make an orbit to allow the aircraft ahead to clear the runway. The pilot elected to continue the approach, closely monitoring the aircraft backtracking on the runway, as well as the aiming point, aircraft profile and position, and airspeed.

As the aircraft ahead taxied clear of the runway, the pilot continued the approach, and selected 10° of flap. However, the pilot omitted to extend the landing gear. The pilot reported the approach was normal, and the conditions were smooth with a light breeze and no turbulence. As the pilot flared the aircraft for landing, the belly of the aircraft contacted the tarmac and the aircraft skidded along the runway. On hearing the scraping sound, the pilot initially applied full power, but the aircraft remained on the ground and came to rest on the gravel beside the runway. The pilot did not hear the stall or landing gear warning horn at any time.

The pilot and passengers were uninjured, and the aircraft sustained substantial damage (Figure 2).

Figure 2: VH-HTP at the accident site

Source: Aircraft operator

Pilot comments

At the point in the pre-landing checks when they would normally extend the landing gear, the pilot assessed they would have to conduct an orbit to give the aircraft ahead time to clear the runway.

The landing gear indication light was located behind the control column and below the pilot's normal visual field during the approach. The pilot first realised that the landing gear was retracted when the aircraft contacted the runway.

Landing gear warning horn

The Cessna 172RG pilot operating handbook stated that the aircraft was fitted with a landing gear warning system, designed to help prevent the pilot from inadvertently making a wheels-up landing. The system consisted of two switches. One switch would be actuated when the throttle was retarded below 12 inches of manifold pressure. If the landing gear was retracted (or not down and locked), an intermittent tone would sound on the aircraft's speaker. A second switch in the wing flap system would also sound the horn when the flaps were extended beyond 20° with the landing gear retracted.

Safety message

Initially assessing that an orbit was required led to a break in the pilot's normal pre-landing checks. The pilot was then distracted monitoring the aircraft on the ground, and the approach. When the pilot assessed that the other aircraft would be clear of the runway and elected to continue the approach, the pilot did not complete the pre-landing checks, and omitted to extend the landing gear.

Generally, distraction is defined as a process, condition or activity that takes a pilot's attention away from the task of flying. Research conducted by the Australian Transport Safety Bureau

identified 325 occurrences between 1997 and 2004, which involved distractions. Of these, 54 occurred during the landing phase of flight.

The Flight Safety Foundation suggests that, after a distraction source has been recognised and identified, the next priority is to re-establish situation awareness by conducting the following:

- *Identify*: What was I doing?
- *Ask*: Where was I distracted?
- *Decide/act*: What decision or action shall I take to get back on track?

The following provide additional information on pilot distraction:

- *Dangerous Distraction: An examination of accidents and incidents involving pilot distraction in Australia between 1997 and 2004*
- Flight Safety Foundation Approach-and-landing Briefing Note 2.4 – *Interruptions/Distractions*
- The United States Federal Aviation Administration (FAA) pamphlet *On Landings Part III*

General details

Occurrence details

Date and time:	14 October 2015 – 1030 CST	
Occurrence category:	Accident	
Primary occurrence type:	Wheels-up landing	
Location:	Elcho Island Aerodrome, Northern Territory	
	Latitude: 12° 01.17' S	Longitude: 135° 34.23' E

Aircraft details

Manufacturer and model:	Cessna Aircraft Company 172RG	
Registration:	VH-HTP	
Serial number:	172RG0918	
Type of operation:	Private	
Persons on board:	Crew – 1	Passengers – 2
Injuries:	Crew – Nil	Passengers – Nil
Damage:	Substantial	

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.