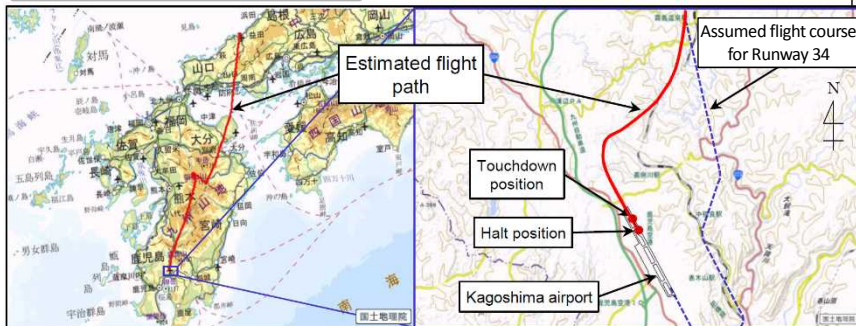


Case 4 Due to pilots' assumption and carelessness (forgetting to extend the landing gear)

After a familiarization flight, the Small Aircraft made a belly-landing due to negligence in forgetting to extend the landing gear. (Captain: Age 48, Total flight time: 378 hours)

Summary: A privately owned Cessna 172RG took off from Iwami Airport for a familiarization flight, and made a belly-landing at Kagoshima Airport on Sunday, April 26, 2015. The Aircraft sustained damage.

Estimated Flight Route



Aircraft involved in the accident

Developments Leading to the Accident

The captain confirmed that there were no weather problems, and the Aircraft took off Iwami Airport at 15:39 JST (Japan Standard Time: UTC +9hrs) to return to Kagoshima Airport.

During the flight, the front visibility decreased at the altitude of about 8,500ft on the east of Mt.Asou. The captain considered the visibility was reduced by volcanic smoke because volcanic smoke of Mt.Asou was observed. The Aircraft veered to north-west and climbed. During the climb, the surface of the earth was seen, however, the field of front vision became poor and the Aircraft almost plunged into the volcanic smoke.

The Aircraft started to descend to land at Kagoshima Airport. However, the descent rate was not sufficient. Therefore, the captain extended the landing gear at about 8,500ft and the descent rate increased.

The captain planned to approach the Airport while keeping the landing gear down, but he retracted the landing gear at an altitude of about 3,500ft for increasing airspeed to land at the Aircraft earlier because there was no traffic approaching the Airport.

Before entering the base-leg, the captain monitored another aircraft requested the Kagoshima tower to land on the runway 34 and Kagoshima tower instructed to hold. The captain entered the final from left-base in a rather shortcut move in order to land on as early as possible. During this, he extended flap to 20°.

The captain thought something was wrong because the aircraft did not touch down at the usual altitude of touchdown. Immediately after that, the altitude became smaller than usual and he heard grazing sound of metal. He checked lower outside of the Aircraft and noticed that the landing gear was not extended.

After the Aircraft stopped, he reported the Kagoshima tower of landing without the gear down.

Causal Factors of the Accident

It is probable that the captain forgot the gear once extended was retracted because he felt mentally trapped because he thought the Aircraft plunged into the volcanic smoke during flight and other traffic were waiting for landing, and he did not go through downwind where usually the landing gear was extended because the period before landing got short due to the runway change.

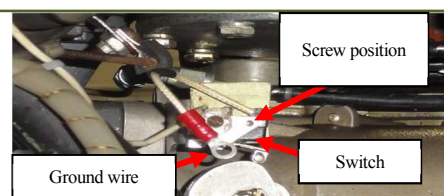
It is probable that he did not securely performed procedures based on the checklist because the captain skipped the gear down item when using the checklist for landing operation*1.

*1 The checklist is not only for secure operation but also for checking the status of the aircraft depending on flight status.

Gear warning

It is probable that the gear warning horn was not sounded even if the throttle was set to idle because the ground wire of the switch for gear warning was came off.

It is probable that the abnormal ground wire could have been noticed if the gear warning had been checked during periodic inspection. If so, it is somewhat likely that the captain noticed that the gear had not extended by the gear warning horn sound.



Video Picture

Picture of the Aircraft landing on the Airport was recorded by the video camera carried on the Aircraft. The shadow of the Aircraft immediately before landing was recorded on the picture. The shadow shows that the landing gear was not extended.



Probable causes: In this accident, it is highly probable that the Aircraft belly landed and the lower part of the Aircraft was damaged because the captain did not extend the landing gear in landing.

It is probable that the captain did not extend the gear because he forgot he retracted the gear once extended and skipped check of the gear down according to the checklist.

Meanwhile, it is somewhat likely that the relatively the captain thought the gear was extended until touch down because the gear warning horn was not sounded.

Safety Actions

- On May 1, 2015, the Japan Civil Aviation Bureau, receiving factual information (about gear warning) from the Japan Transport Safety Board, notified All Japan Air Transport and Service Association Co., Ltd. and Japan Aircraft Pilot Association of making members know the information about the viewpoint of preventing similar aircraft accidents.

The investigation report of this case is published on the Board's website (issued on March 31, 2016).
http://www.mlit.go.jp/jtsb/eng-air_report/JA3857.pdf

Similar accident (Inappropriate operation of landing gear due to carelessness)

Date of occurrence	Operator	Category	Pilot's age	Total flight time	Summary of the accident
					Probable causes
August 23, 2010	Private	Small Aircraft	57	433	<p>The Aircraft took off from Yao Airport for a familiarization flight but made a belly-landing at Kobe Airport, became stranded on the runway and sustained damage.</p> <p>It is highly probable that this accident occurred as the captain forgot to extend the landing gear upon landing, which caused the belly-landing and damage in the fuselage.</p> <p>It is highly probable that the captain considered that he had extended the landing gear. It is somewhat likely that the captain's failure to use the checklist in landing operation is one of the reasons for his wrong assumption.</p>
December 2, 2010	Private	Small Aircraft	62	1,700	<p>The Aircraft made a belly-landing on Runway 12 at Sendai Airport and became stranded.</p> <p>It is highly probable that the landing gear started to be retracted immediately after the Aircraft touched the ground on Runway 12 at Sendai Airport, due to which the fuselage was damaged.</p> <p>It is highly probable that the captain, who thought that he had failed to extend the landing gear, erroneously operated the lever, causing the gear to be retracted.</p>
October 12, 2014	Private	Small Aircraft	72	15,551	<p>The Aircraft made a belly-landing, causing the airframe to be damaged when landing on runway 17 of Chofu Airfield.</p> <p>It is highly probable that this accident occurred while the alternator of the aircraft failed during the flight and it is highly probable that the pilot did not notice this and continued flight with the power of battery only, which caused decreased battery voltage, and in spite of this, the emergency landing gear extension operation was not made and the gears were not down, causing the belly landing, with the airframe damaged.</p> <p>It is probable that an emergency landing gear extension operation was not made because the pilot thought that the gears had already been down with normal operation and the confirmation and the operation of the emergency gear extension procedure described in the Airplane Flight Manual were not appropriately executed.</p>