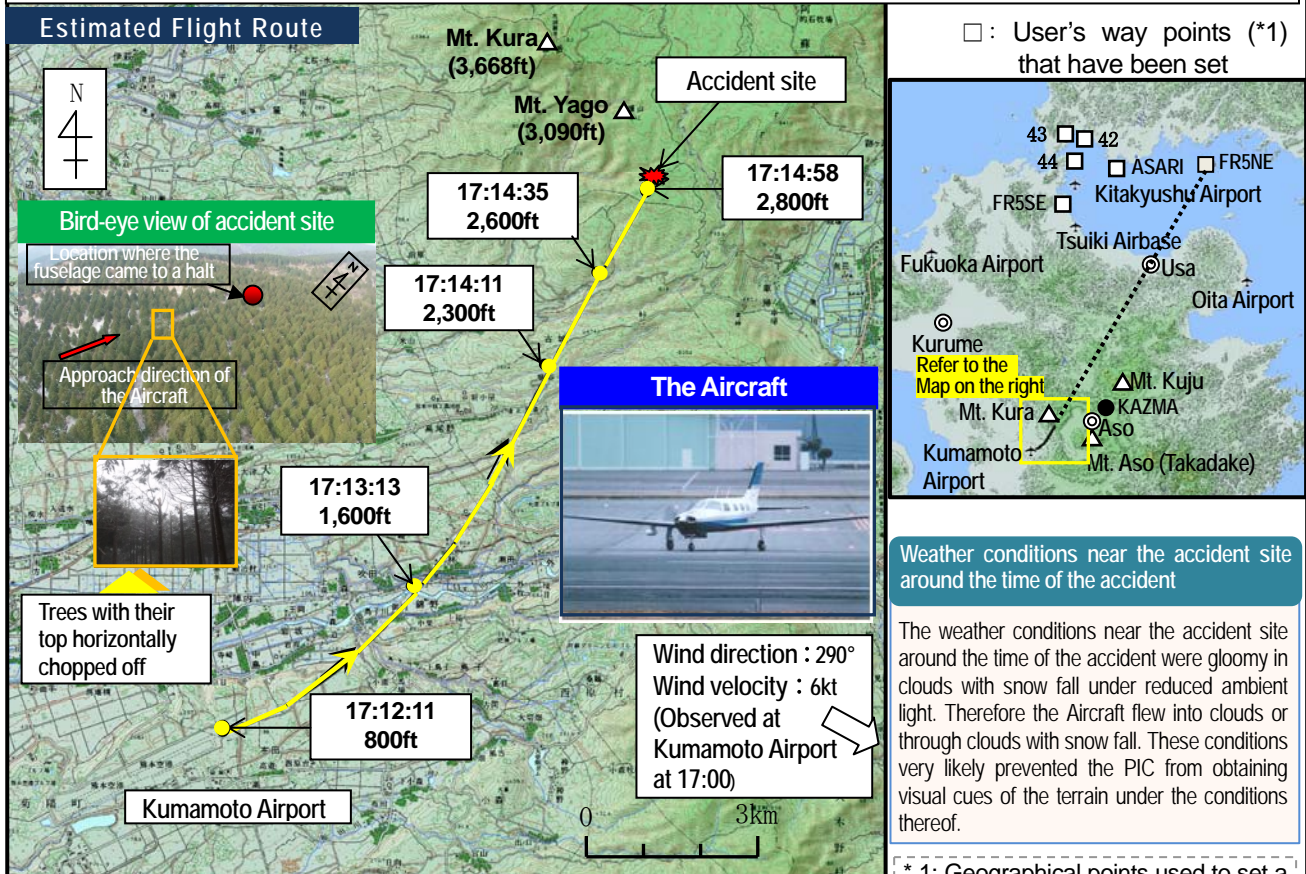


### 3. Case Studies of Accident

#### Case 1

#### Flew into the mountain slope on the route during its in-cloud climb with a low climb rate

Summary: A privately owned Piper PA-46-350P (the Aircraft) took off from Kumamoto Airport at around 17:11 local time for Kitakyushu Airport for a leisure flight and went missing on Monday, January 3, 2011. Next day it was found on the south-south-east slope of Mt. Yago, 14km northeast of the airport, having been destroyed and a pilot in command (PIC) and a passenger having suffered fatal injuries next day.



#### Events Leading to the Accident

Around 17:11

The Aircraft took off from Kumamoto Airport.

17:14:11

The PIC made a position report to the Kumamoto Airport Control Tower (hereinafter, "Kumamoto Tower") at 6nm north of the airport at 2,300ft.

17:14:25

The PIC reported to Kumamoto Tower saying, "climbing to 6,500 ft."

17:14:58

The Aircraft vanished from the radar system of Kumamoto Tower.

Around 17:19

An aircraft flying over KAZMA (way point) at 10,000 ft reported to Kumamoto Tower of a reception of emergency locator transmitter (ELT) signal.

#### Causal Factors of the Accident

Possible explanation for the hurried take-off from the airport for Kitakyushu Airport are the deteriorating weather near Kumamoto Airport and for maintaining VFR flight (Visual Flight Rules) (\*2) under diminishing daylight conditions caused by the almost sunset time.

\*2 : A method of a flight in a visual meteorological condition (VMC), which is a climate condition where a sufficient vision can be maintained for flight.

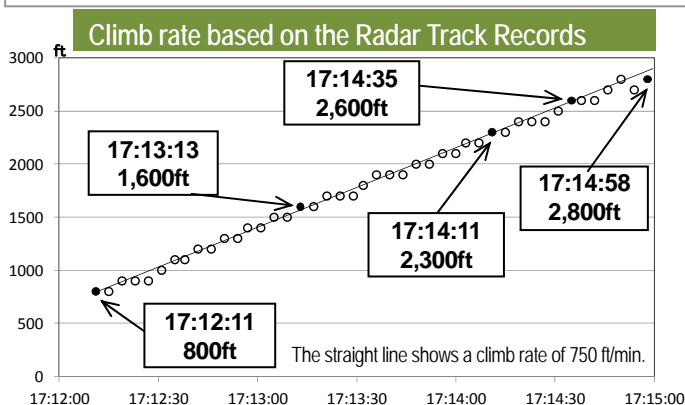
It is possible that the PIC decided to resume the flight to Kitakyushu Airport without receiving the weather briefing at the weather station at Kumamoto Airport, as he had judged, from the clouds to the north of the airport during the descent, that the flight to Kitakyushu Airport would be possible by climbing to 6,500 ft in order to fly above the clouds to the north of Kumamoto Airport with the help of onboard weather radar after the take-off from Kumamoto Airport.

#### PIC's Familiarization to Terrain Features Near Kumamoto Airport

The Aircraft's flight logbook did not contain PIC's flight records for landing at and taking off from Kumamoto Airport; however, his logbook contained records for landing at and taking off from Kumamoto Airport on different small aeroplanes. These records suggest a possibility that he was not sufficiently familiar with the terrain features near Kumamoto Airport.

## The Aircraft's Flight Route

The PIC's possible intention was to take the course which would enable him to fly over mountains of moderate height at 6,500 ft, without flying over mountains of comparably high height and reach Kitakyushu Airport by turning to the left during its after-takeoff climb and flying directly to WP positioned on the extension of the Aircraft's flight path, as shown in the Estimated Flight Route.



It is possible that the low climb rate after taking off from Kumamoto Airport suggests that the PIC expected icing conditions and kept the climb rate low in order to maintain climb speed activating the ice protection.

It is possible that as he was not sufficiently familiar with mountain terrain features near Kumamoto Airport, he shifted into a straight ascent with a low climb rate, giving priority to a climb speed.

## Selection of Flight Rule

Kumamoto Airport was in the visual meteorological condition (VMC).

Generally an IFR (Instrument Flight Rule) (\*3) travel distance to Kitakyushu Airport is longer than that of VFR, leading to a longer flight time, and IFR radio transmissions with ATC organizations are more complicated.

It is possible that the PIC chose to fly VFR at the time of takeoff.

\* 3: A flight method while receiving instructions from air-traffic controls all the time regarding the aircraft's flight route and flight methods.

## PIC's Departure Judgment

The following possibilities are summarized:

- ▶ The PIC had an outlook for an en-route flight rule change to IFR depending on the weather even though he chose to fly under VFR upon taking off from Kumamoto Airport.
- ▶ He depended on the onboard weather radar and navigation device.
- ▶ He reduced the climb rate in order to secure a climb speed anticipating icing conditions.
- ▶ He was not familiar with mountain terrain features near Kumamoto Airport; however, he believed that he could climb through the clouds without crashing into terrain even with the reduced climb rate.

## In order to Prevent Recurrence (Recommendation)

In light of the investigation results of this accident, the JTSB in accordance with the Paragraph 1, Article 26, the Act of JTSB establishment, recommends the Minister of Land, Infrastructure, Transport and Tourism as below.

**In order to prevent accidents in which an aircraft end up with accident after it flew in clouds under VFR, following directions should be disseminated to all the members of pilot associations and individual pilots, also using opportunity by the newly introduced "Review System on Specific Pilot Competence" (Heisei 24 MLIT Ordinance No.22).**

- (1) Commence flying only when VMC is maintained all across the en-route based on the latest weather information.**
- (2) Prepare alternative plans in case where deteriorating weather while collecting weather information on en-route.**
- (3) Decide well in advance on returning to the departed airport or landing at a proper place.**

We would like all small aeroplane pilots to understand the purpose of these recommendations and ensure safe flights.

The investigation report of this case is published on the Board's website (issued on September 28, 2012)

[http://www.mlit.go.jp/jtsb/eng-air\\_report/JA701M.pdf](http://www.mlit.go.jp/jtsb/eng-air_report/JA701M.pdf)

(This report is a translation of the Japanese original investigation report. The text in Japanese shall prevail in the interpretation of the report.)