

AA2019-6

**AIRCRAFT ACCIDENT  
INVESTIGATION REPORT**

**PRIVATELY OWNED  
N 7 0 2 A V**

July 25, 2019

The objective of the investigation conducted by the Japan Transport Safety Board in accordance with the Act for Establishment of the Japan Transport Safety Board and with Annex 13 to the Convention on International Civil Aviation is to determine the causes of an accident and damage incidental to such an accident, thereby preventing future accidents and reducing damage. It is not the purpose of the investigation to apportion blame or liability.

Nobuo Takeda  
Chairman  
Japan Transport Safety Board

Note:

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

# AIRCRAFT ACCIDENT INVESTIGATION REPORT

## CRASH DUE TO LOSS OF CONTROL DURING FLIGHT PRIVATELY OWNED SOCATA TBM700, N702AV IN YAMAZOE VILLAGE, YAMABE-GUN, NARA PREFECTURE AT AROUND 12:15 JST, AUGUST 14, 2017

June 14, 2019

Adopted by the Japan Transport Safety Board

Chairman	Nobuo Takeda
Member	Toru Miyashita
Member	Yoshiko Kakishima
Member	Yuichi Marui
Member	Yoshikazu Miyazawa
Member	Miwa Nakanishi

## SYNOPSIS

### <Summary of the Accident>

On Monday, August 14, 2017, a privately owned Socata TBM700, registered N702AV, took off from Yao Airport at 11:57 Japan Standard Time (JST: UTC + 9 hours; all times are indicated in JST on a 24-hour clock), for the purpose of leisure flight under Instrument Flight Rules (IFR), deviated from the route instructed by an air traffic controller on the way to Fukushima Airport and crashed into a mountain forest in Yamazoe village, Yamabe-gun, Nara Prefecture after the last communication at 12:13, saying that it would return to Yao Airport.

A captain and a passenger were on board the aircraft and both were fatally injured.

The aircraft was destroyed and a fire broke out.

## <Probable Causes>

In the accident, it is highly probable that the Aircraft lost control during flight, nose-dived while turning, and disintegrated in mid-air, resulting in the crash.

It is somewhat likely that the Aircraft lost control during flight, because the captain did not have pilot skills and knowledge necessary for the operation of the Aircraft, and was not able to perform proper flight operations.

## <Recommendations>

### **Recommendations to the Minister of Land, Infrastructure, Transport and Tourism**

In the accident, it is somewhat likely that the Aircraft lost control during flight, because the captain did not have pilot skills and knowledge necessary for the operation of the Aircraft, and was not able to perform proper flight operations. The captain had a valid Japanese competence certificate in this regard, and in case of the competence certificate in Japan, with regard to the aircraft not requiring the type rating, if the aircraft meet each class rating, pilots can be entitled to operate the aircraft within the scope of services in accordance with each qualification, regardless of the characteristics of each aircraft.

Therefore, in view of the identified matters of the accident investigation, in order to ensure the safety of aviation, the Japan Transport Safety Board recommends to implement the following measure pursuant to the provision of Article 26 of the Act for Establishment of the Japan Transport Safety Board to the Ministry of Land, Infrastructure, Transport and Tourism.

In order to prevent pilots from flying without skills and knowledge necessary for operating the respective aircraft, it is necessary for the Civil Aviation Bureau of the Ministry of Land, Infrastructures, Transport and Tourism to instruct the pilots to master the skills and knowledge required for operating the aircraft which the pilots have never flown before, even in case of operating the aircraft not requiring the type rating.

The main abbreviations used in this report are as follows:

AIM-J	: Aeronautical Information Manual Japan
AOA	: Angle of Attack
ATO	: Approved Training Organization
ATPL	: Airline Transport Pilot License
BEA	: Bureau d'Enquêtes et d'Analyses pour la Sécurité de l'Aviation Civile
BPL	: Balloon Pilot License
CBT	: Computer Based Training
CFR	: Code of Federal Regulations
CPL	: Commercial Pilot License
CT	: Compressor Turbine
EU	: European Union
EASA	: European Aviation Safety Agency
ELT	: Emergency Locator Transmitter
FAA	: Federal Aviation Administration
FAR	: Federal Aviation Regulations
FCL	: Flight Crew licensing
FL	: Flight Level
FTO	: Flight Training Organization
HDG	: Heading
IAS	: Indicated Air Speed
IFR	: Instrument Flight Rules
IR	: Instrument Rating
KCAS	: Knots Calibrated Airspeed
KIAS	: Knots Indicated Airspeed
KTAS	: Knots True Airspeed
LAPL	: Light Aircraft Pilot License
MAC	: Mean Aerodynamic Chord
NAV	: Navigation
PCA	: Positive Control Area
POH	: Pilot's Operating Handbook
PPL	: Private Pilot License
PT	: Power Turbine

RGB : Reduction Gear Box  
SPL : Sailplane Pilot License  
SID : Standard Instrument Departure  
TCA : Terminal Control Area  
TGL : Touch and Go Landing  
TRTO : Type Rating Training Organization  
VFR : Visual Flight Rules  
VA : Maneuvering Speed  
VMO : Maximum Operating Speed  
VS : Vertical Speed

Unit Conversion List:

1 ft : 0.3048 m  
1 atm : 29.92 inHg : 1,013 hPa  
1 nm : 1,852 m  
1 lb : 0.4536 kg  
1 kt : 1.852 km/h (0.5144 m/s)

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# **1 PROCESS AND PROGRESS OF THE AIRCRAFT ACCIDENT INVESTIGATION**

## **1.1 Summary of the Accident**

On Monday, August 14, 2017, a privately owned Socata TBM700, registered N702AV, took off from Yao Airport at 11:57 Japan Standard Time (JST: UTC + 9 hours; all times are indicated in JST on a 24-hour clock), for the purpose of leisure flight under Instrument Flight Rules (IFR), deviated from the route instructed by an air traffic controller on the way to Fukushima Airport and crashed into a mountain forest in Yamazoe village, Yamabe-gun, Nara Prefecture after the last communication at 12:13, saying that it would return to Yao Airport.

A captain and a passenger were on board the aircraft and both were fatally injured.

The aircraft was destroyed and a fire broke out.

## **1.2 Outline of the Accident Investigation**

### **1.2.1 Investigation Organization**

On August 14, 2017, the Japan Transport Safety Board designated an investigator-in-charge and an investigator to investigate this accident.

### **1.2.2 Representatives from the Relevant States**

An accredited representative and an advisor of the French Republic, as the State of Design and Manufacture of the aircraft involved in the accident, an accredited representative and an advisor of Canada, as the State of Design and Manufacture of the engine of the aircraft, and an accredited representative of the United State of America, as the State of Registry of the aircraft, participated in the investigation.

### **1.2.3 Implementation of the Investigation**

August 15 to 18, 2017	Interviews, aircraft examination and on-site investigation
September 19 and 20, 2017	Aircraft examination and on-site investigation
October 31 to November 2, 2017	Aircraft examination
January 11, 2018	Yaw trim actuator examination (performed by the yaw trim actuator manufacture in the presence of BEA)

#### **1.2.4 Comments from Parties Relevant to the Cause**

Comments were not invited from parties relevant to the cause, because the captain as the party concerned were fatally injured.

#### **1.2.5 Comments from the Relevant States**

Comments on the draft report were invited from the Relevant States.

## 2. FACTUAL INFORMATION

### 2.1 History of the Flight

On August 14, 2017, a privately owned Socata TBM700, registered N702AV (hereinafter referred to as “the Aircraft”), took off from Yao Airport (hereinafter referred to as “the Airport”) at 11:57, for the purpose of leisure flight, with a captain in the left pilot seat and a passenger, who did not have a pilot license, in the right pilot seat.

The flight plan of the Aircraft is outlined below:

Flight rules:	Instrument Flight Rules (IFR)
Departure aerodrome:	Yao Airport
Estimated off-block time:	11:20
Cruising speed:	280 kt
Cruising altitude:	FL*1 220
Route:	ASUKA (Waypoint) – KCC (Nagoya VORTAC) – Y88 (RNAV route) – GOT (Daigo TACAN)
Destination aerodrome:	Fukushima Airport
Total estimated elapsed time:	2 hours 45 minutes
Fuel load expressed in endurance:	5 hours 30 minutes

Based on radar track records for air traffic control, the images of a dashboard camera, ATC communications records, and the statements of air traffic controllers (hereinafter referred to as “Controllers”) and eyewitnesses, flight history up to the time of the accident is summarized as below,.

#### 2.1.1 History of the Flight based on Radar Track Records for Air Traffic Control and ATC Communications Records

According to the radar track records for air traffic control at Kansai Aerodrome control tower, the estimated flight route of the Aircraft after the take-off until the crash is as shown in Figure 1.

The Aircraft received a clearance to Fukushima Airport via Standard Instrument Departure (SID), ASUKA SIX DEPARTURE from the air traffic controller at control position of Yao Aerodrome control tower (hereinafter referred to as “the Yao Tower”), and was instructed

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\*1 “FL” refers to the pressure altitude of the standard atmosphere. It is the altitude indicated by value divided by 100 of the index of the altitude indicator (unit: ft) when QNH is set to 29.92 inHg, FL is usually applied when flight altitude is 14,000 ft or above in Japan. E.g., FL 200 indicates an altitude of 20,000 ft.

to contact with the approach control of Kansai radar approach control (hereinafter referred to as “Kansai Approach”) and maintain an altitude of 2,500 ft after the take-off; and then at 11:57, the Aircraft took off from the Airport.

- 11:58:10 The Aircraft received the second clearance from the Yao Tower and responded to the third call from Kansai Approach. Kansai Approach instructed the Aircraft to climb and maintain 4,000 ft.
- 11:59:17 Kansai Approach instructed the Aircraft to climb and maintain 5,000 ft, and it read back.
- 11:59:42 Kansai Approach instructed the Aircraft to turn right to heading 360°, but it did not respond.
- 11:59:49 Kansai Approach instructed the Aircraft to turn right to heading 010°, and it read back.
- 12:00:10 Kansai Approach instructed the Aircraft to contact with the departure control of Kansai radar approach control (hereinafter referred to as “Kansai Departure”).  
The Aircraft turned right at an altitude of 4,600 ft and at a ground speed of about 170 kt, and the climb rate decreased gradually.
- 12:00:30 The Aircraft said it was climbing to an altitude of 6,000 ft to Kansai Departure. Kansai Departure instructed it to maintain an altitude of 5,000 ft.
- 12:01:25 Kansai Departure instructed the Aircraft to turn right to heading 040°, and it read back.
- 12:01:52 The Aircraft turned right at an altitude of 5,200 ft and at a ground speed of about 240 kt.
- 12:02:00 Kansai Departure instructed the Aircraft to climb and maintain FL160, and it read back.
- 12:02:47 The Aircraft commenced to climb at an altitude of 5,300 ft and at a ground speed of about 220 kt.
- 12:03:03 Kansai Departure instructed the Aircraft to turn right to heading 090°, and it read back.
- 12:03:37 The Aircraft turned right while climbing at an altitude of 6,800 ft and at a ground speed of about 190 kt.
- 12:04:10 Kansai Departure instructed the Aircraft to turn right to heading 100°, and it read back.
- 12:05:14 Kansai Departure instructed the Aircraft to fly directly to ASUKA

- (waypoint), and it read back.
- 12:05:54 The heading started to swing, while climbing at an altitude of 10,300 ft and at a ground speed of about 120 kt.
- 12:08:13 The Aircraft turned right and changed the heading to the southeast while climbing at an altitude of 12,500 ft and at a ground speed of about 180 kt.
- 12:09:22 Kansai Departure asked the Aircraft whether it was flying directly to ASUKA, and it responded saying that it was flying directly to ASUKA. .
- 12:10:39 Kansai Departure asked the Aircraft about its heading, but there was no response from the Aircraft.
- 12:11:02 Kansai Departure asked the Aircraft about its heading again, and it responded saying that its heading was 070°. Kansai Departure asked the Aircraft whether the heading was 070°, but there was no response from the Aircraft.
- 12:11:30 Kansai Departure confirmed whether the Aircraft was maintaining FL160, there was a response from the Aircraft. Kansai Departure instructed the Aircraft about heading 070°, but there was no response from the Aircraft.
- 12:11:54 The Aircraft started to descend and changed the heading to the east after climbing to an altitude of 17,200 ft at a ground speed of about 150 kt.
- 12:12:10 In Japanese, Kansai Departure instructed the Aircraft to promptly descend to FL160 and follow ATC instructions, but there was no response from the Aircraft.
- 12:12:42 The Aircraft requested radar vectors to the Airport. Kansai Departure confirmed in Japanese whether the Aircraft would return to the Airport.
- 12:12:58 The Aircraft cancelled IFR flight.
- 12:13:48 The Aircraft started a right turn while descending from an altitude of 16,000 ft at a ground speed of about 180 kt.
- 12:14:19 Kansai Departure instructed the Aircraft to contact with the air traffic controller at TCA\*2 of Kansai radar approach control (hereinafter referred to as “Kansai TCA”).
- 12:14:46 The Aircraft requested Kansai TCA to provide radar vectors to the Airport.

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\*2 “TCA (Terminal Control Area)” refers to public airspace within the approach control area in which TCA advisory operations are made for aircrafts flying under visual flight rules (VFR aircrafts) where VFR aircrafts are particularly congested. Within TCA, the following services shall be provided for VFR aircrafts that radar identified.

a) TCA Radar advisory service, b) Radar navigational guidance based on the requirement of said aircraft, c) The provision of positional information of said aircraft, d) Advice for approach order and holding.

- 12:14:56 Kansai TCA instructed the Aircraft to turn right heading to the west, but after that, the Aircraft did not respond to the calls from Kansai TCA.
- 12:15:22 The Aircraft nosedived while turning right near the crash site, passing an altitude of 13,000 ft.
- 12:15:53 The Aircraft disappeared from the radar after being confirmed last at 8,700 ft above around the crash site.

The flight route from 12:15:22 to 12:15:53 was about 2.21 nm in distance along the route and about 18° in descent angle. (See Figure 3.)

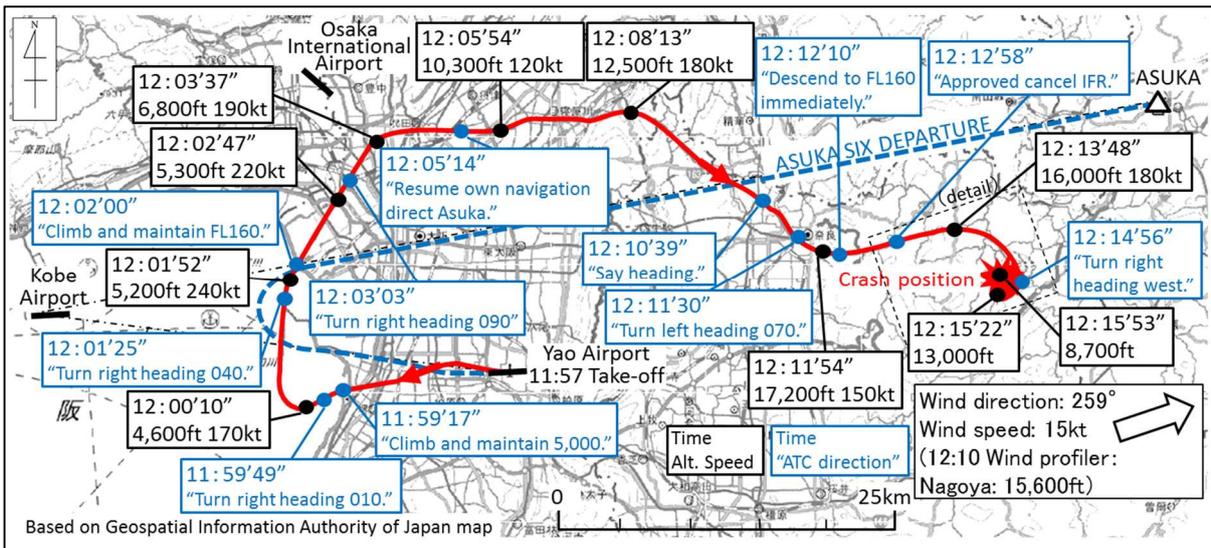


Figure 1: estimated flight route

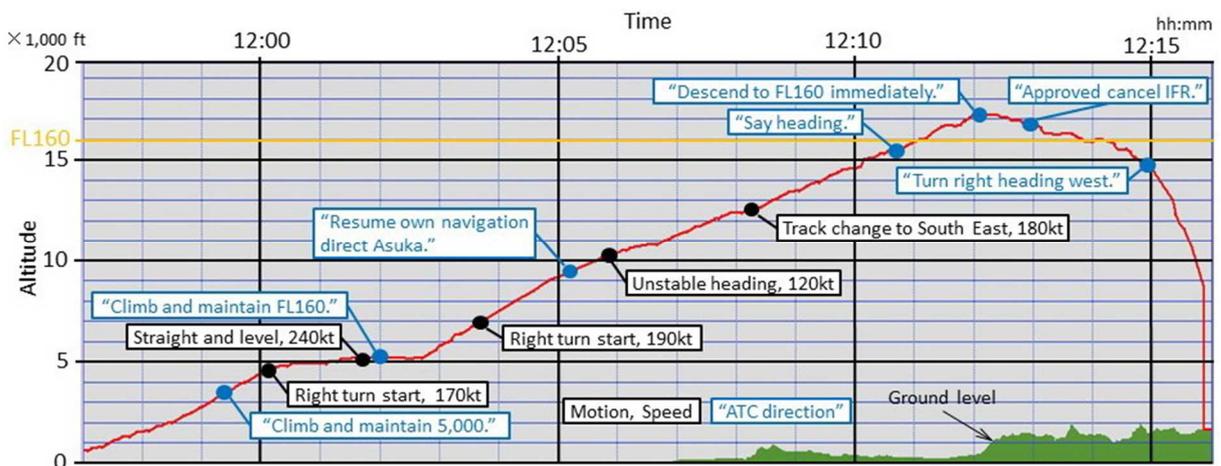


Figure 2: vertical cross section chart of the estimated flight route

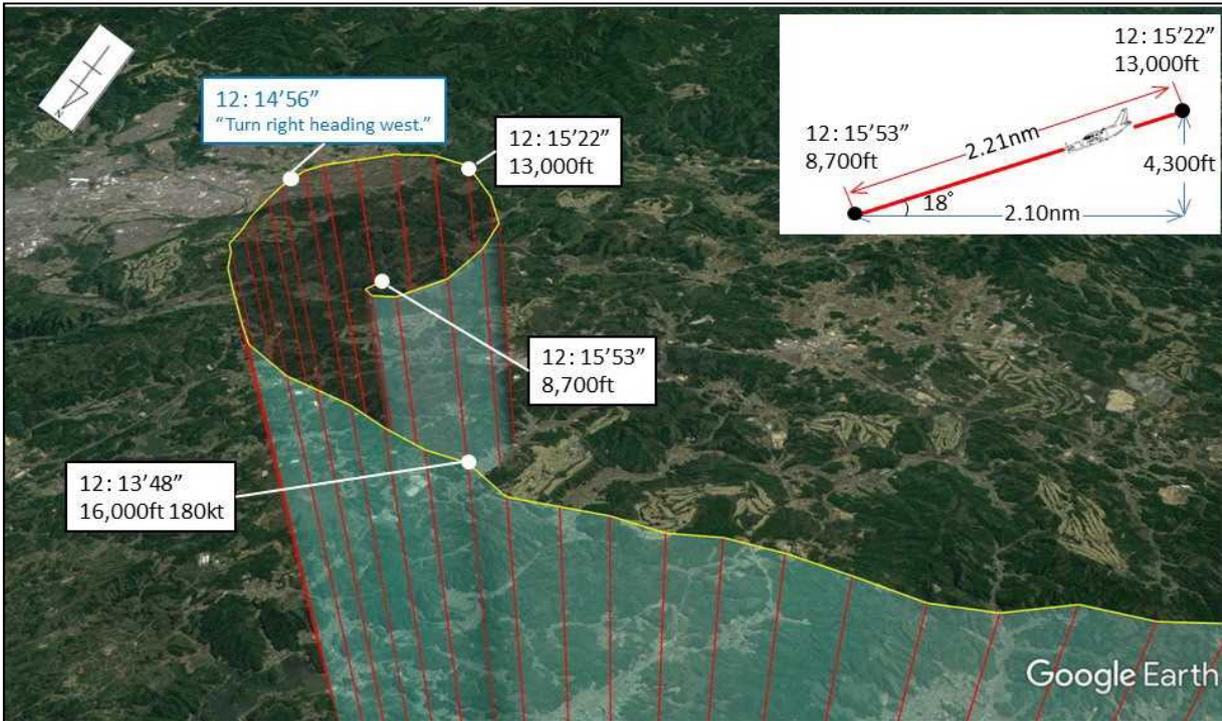


Figure 3: estimated flight route (detailed)

### 2.1.2 Statements of Controllers

#### (1) Controller at Kansai Approach

The Aircraft took off from the Airport, but it did not call to Kansai Approach soon, therefore, Kansai Approach called to the Aircraft, and finally it responded to the third call from Kansai Approach. The Aircraft deviated southward rather than the SID flight path. As it could have a great influence on the aircraft take-offs / landings at the surrounding airports, if the Aircraft would deviate further westward, the Controller instructed earlier the Aircraft to turn heading 360°, but there was no response from it. When the Controller instructed the Aircraft to turn right to heading 010° and climb to an altitude of 5,000 ft, it read back and changed to heading 010° at an acute angle.

#### (2) Controller at Kansai Departure

The Aircraft was transferred from Kansai Approach to Kansai Departure. As the Aircraft mentioned an altitude of 6,000 ft that was different from the instruction by Kansai Approach, the Controller instructed it to maintain an altitude of 5,000 ft. After avoiding another aircraft by instructing the Aircraft to turn to heading 040°, the Controller instructed it to climb to FL160. The Aircraft's timing of read-back was deviated every time. The Aircraft was heading southward even though it was supposed to fly directly to ASUKA, and when

asked about the ongoing heading, the Aircraft replied “070°”, the direction toward ASUKA. As the altitude of the Aircraft passed FL 170, the Controller instructed it to return to FL160. Nevertheless, the Aircraft was still heading southward. The Controller instructed it not to raise the altitude in Japanese, because it might have an influence on another aircraft. The Aircraft said abruptly that it would return to the Airport without explaining any reasons, and as the Aircraft requested to cancel the flight under IFR, the Controller instructed it to contact with Kansai TCA.

(3) Controller at Kansai TCA

As the captain of the Aircraft said that it would return to the Airport, the Controller instructed the Aircraft to head westward, however it did not respond. The Aircraft suddenly went descending while turning right without communicating about its abnormality to the Controller. Before long, it became difficult to identify the Aircraft on radar, and it disappeared from the radar screen. Immediately, the Controller called the Aircraft, but there was no response from the Aircraft. Since around this area, it happens often that the aircraft cannot be captured by radar when an aircraft flies at a lower altitude, the Controller asked Yao Aerodrome control tower to let him know when the Aircraft arrived. As the arrival of the Aircraft was not able to be confirmed even after 30 minutes passed, the Controller immediately started the search and rescue operation.

2.1.3 Statements of Eyewitnesses

(1) Eyewitness A

Eyewitness A saw the Aircraft crashing when he was sitting in a chair outside about 1.3 km northeast of the crash site.

From the west sky, hearing a high sound of malfunctioning engine noise as if a small motorbike was racing its engine to the utmost, Eyewitness A

looked up at the sky. Eyewitness A saw the Aircraft falling almost vertically into the mountain, with one wing catching on fire and nearly half of the airframe enveloped in flames. The Aircraft was hidden behind the mountain, and after a moment, Eyewitness A heard a big bang like a rumbling of the earth.

Eyewitness A got in a car and headed for rescue of the passengers of the Aircraft, but could not reach the Aircraft because the accident site was in a mountain area

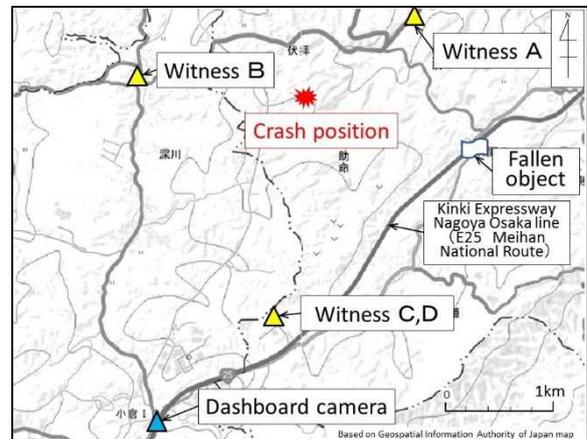


Figure 4: positions of eye witnesses

without any roads.

(2) Eyewitness B

Eyewitness B saw the Aircraft crashing about 1.7 km west of the crash site.

At about 12:15, sitting in the parking car with its window opened, Eyewitness B heard the big sound like a motorbike running. As the sound was so loud that Eyewitness B got out of the car and looked at the sky over the direction the sound was coming from, when the Aircraft was coming out from the clouds and flying from west to east while making a huge noise that he had never heard of before. While spiraling and being enveloped in white smoke and orange flame, the Aircraft was falling straight from its nose. The Aircraft fell at a tremendously high speed, and when he thought it had gone off the other side of the mountain, the smoke rose with a big bang.

(3) Eyewitness C

Eyewitness C saw the Aircraft crashing about 2.1 km south-southwest of the crash site.

Hearing a buzzing sound and looking up at the sky, in the direction of the northeast, Eyewitness C saw the Aircraft flying. When something large parts came off from the Aircraft, immediately after white smoke rose and fire started from around its wing, soon the Aircraft crashed into the mountain with its nose down while spiraling, and then black smoke rose.

(4) Eyewitness D

Eyewitness D saw the Aircraft crashing about 2.1 km south-southwest of the crash site.

When Eyewitness D spotted the Aircraft for the first time, it was already on fire. While Eyewitness D was watching it thinking that it might be an acrobatic flight, the Aircraft was falling down while spiraling. Eyewitness D heard a buzzing noise of the engine, and in a while, a loud thumping noise. After its crashing, black smoke rose.

### 2.1.4 Images of Dashboard Camera

The image of the Aircraft's crash was recorded on the dashboard camera of the vehicle travelling northeast on the Kinki Expressway Nagoya Osaka Line (E25, Meihan National Route) about 3.4 km southwest of the crash site.

One second before the crash, an object that seemed to be the Aircraft emerged from the low cumulus layer trailing black smoke, and went falling down. Subsequently, an object separated from the object falling first came out trailing black smoke. The first emerged object burned explosively emitting orange light before impacting the ground. After the two objects had reached the ground, the trailing black smoke disappeared gradually. Five seconds after the crash, two columns of black smoke trailed from the vicinity of the crash site.

### 2.1.5 Information on falling objects

The permission, which the Aircraft was carrying, concerning the proviso to paragraph 1 of Article 11 (Airworthiness Certificate) of the Civil Aeronautics Act (Act No. 231 of July 31, 1952) was found on the road of the Konoguchi Interchange descending acceleration lane of the Meihan National Route about 1.6 km east-southeast of the crash site, and recovered.

This accident occurred in the mountains of Yamazoe village, Yamabe-gun, Nara Prefecture (34°39'16"N, 136°00'01"E) at around 12:15 on August 14, 2017.

(See Figure 1: estimated flight route, Figure 2: vertical cross section chart of the estimated flight route, Photo 3: estimated flight route (detailed), Figure 4: positions of eyewitnesses and Figure 5: continuous photos of the dashboard camera.).

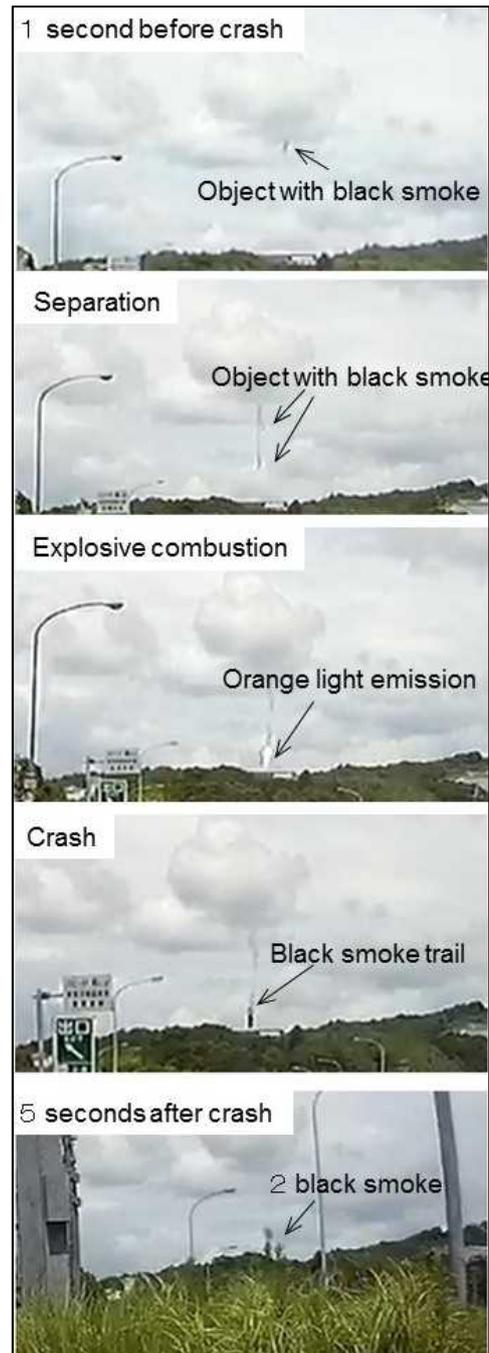


Figure 5: continuous photos of the dashboard camera

## 2.2 Injuries to Persons

There were two persons on board the Aircraft, consisting of a captain and a passenger and both were fatally injured.

## 2.3 Damage to the Aircraft

### 2.3.1 Extent of Damage

Destroyed

### 2.3.2 Damage to the Aircraft Components

Fuselage	Broken, burned
Left wing	Broken, damaged
Right wing	Broken, burned
Horizontal stabilizer	Detached, damaged
Vertical stabilizer	Detached, damaged
Engine	Burned, damaged

## 2.4 Personnel Information

Captain	Male, Age 68	
Commercial pilot certificate		June 26, 1984
Pilot competency assessment		
Expiry of practicable period for flight		April 14, 2018
Rating for single engine (land)		February 28, 1979
Instrument flight certificate		September 3, 1983
Class 1 aviation medical certificate		
Validity		June 22, 2018
Total flight time		3,750 hours or more
Flight time in the last 30 days		5 hours 30 minutes
Total flight time on the type of aircraft		7 hours 00 minute
Flight time in the last 30 days		5 hours 30 minutes
Total flight time on instrument flight in the last 180 days		Unknown

The captain did not have any appropriate certificates or licenses issued or validated by the United States of America, the State of Registry of the Aircraft.

## 2.5 Aircraft Information

### 2.5.1 Aircraft

Type	Socata TBM700
Serial number	182
Date of manufacture	December 14, 2000
Date of obtaining airworthiness certificate (the United States of America)	December 14, 2000
Category of airworthiness	Airplane Normal N
Total flight time	2,094 hours 18 minutes
Flight time since last periodical check (Annual inspection carried out on July 3, 2017)	5 hours 30 minutes

(See Appendix 1: Three Angle View of Socata TBM700)

### 2.5.2 Weight and Balance

When the accident occurred, the weight of the Aircraft is estimated to have been 6,424 lb and the position of the center of gravity is estimated to have been 24.9% MAC\*<sup>3</sup>, both of which are estimated to have been within the allowable range (maximum take-off weight of 6,579 lb, and 18.6 to 36.6% MAC corresponding to the weight at the time of the accident).

### 2.5.3 Characteristics

Turboprop engine, engine output 700 horse power, pressurized aircraft (maximum operating altitude 30,000 ft), maximum operating limit speed 266 KIAS.

## 2.6 Meteorological Information

### 2.6.1 Weather Radar Echo Status

The echo status of the weather radar (reflection intensity) near the accident site was as shown in Figure 6, and no noticeable echo was confirmed near the Aircraft's crash position.

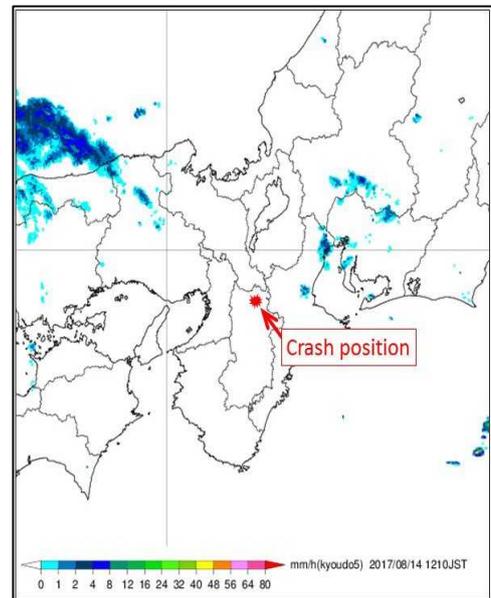


Figure 6: radar image (12:10)

\*<sup>3</sup> "MAC" refers to the abbreviation Mean Aerodynamic Chord. It is a wing chord that represents the aerodynamic characteristic of the wing, and indicate the average of when the wing chord such as the rear wing chord is variable. 24.9 % MAC indicates a 24.9 % position from the front of the mean aerodynamic chord.

(See Figure 6: radar image [12:10].)

### 2.6.2 Wind Conditions in the Upper Air

According to the wind profiler records at the Nagoya Observation Station (about 105 km northeast of the accident site) and the Takamatsu Observation Station (about 185 km southwest of the accident site), the wind direction and speed in the upper air around the time when the accident

occurred were as shown in Table 1.

Table 1: wind profiler record

Point	Nagoya	Takamatsu
Time	12:10	12:10
Altitude	4,657 – 4,708 m (Around 15,600 ft)	5,531 – 5,540 m (Around 18,500 ft)
Wind direction and speed	259° 8 m/s	290° 12 m/s

### 2.6.3 Weather Observations at the Airport

Aviation weather observations at the Airport, around the time when the accident occurred, were as follows:

12:00 Wind direction variation; wind speed 1 kt; Prevailing visibility 35 km  
 Cloud: Amount 1/8; Type cumulus; Cloud base 3,000 ft  
 Amount 4/8; Type cumulus; Cloud base 4,000 ft  
 Amount 5/8; Type unknown; Cloud base unknown  
 Temperature 31°C; Dew point 20°C  
 Altimeter setting (QNH\*4) 29.74 inHg

### 2.6.4 Weather Observations in the vicinity of the Accident Site

Weather observations at the Observation Stations “Nara” (about 15 km west of the accident site, an elevation of 102 m) and “Hari” (about 7 km southwest of the accident site, an elevation of 468 m),

around the time when the accident occurred, were as shown in Table 2.

Table 2: regional weather station observations

Station	Time	Wind direction (°) / Wind speed (m/s)		Temperature (°C)	Precipitation (mm)	Sunshine duration (minutes)
		Average	Maximum instantaneous			
Nara	12:10	292.5 / 2	292.5 / 3.9	29.4	0	10
	12:20	270 / 1.6	315 / 3.3	29.3	0	5
Hari	12:10	270 / 2.1	225 / 4.9	26.9	0	10
	12:20	247.5 / 2	247.5 / 5.2	27.3	0	10

\*4 “QNH” is one of the pressure altimeter settings, and is usually provided in inHg units. In Japan, when an airplane is at less than 14,000 ft above mean sea level shall be set to QNH of a point on the nearest flight path.

## 2.7 Scene of the Accident

The crash site was a forested site covered with tall trees near the top of the mountain (an elevation of 514.3 m) in the suburbs of Nara City.

The wreckage of the Aircraft was scattered within the range of about 200 m north-south and about 100 m in the east-west.

The main components of the Aircraft (front

part of cabin, engine part and

propeller) were found being crashed into the

bottom of the valley with its nose facing north-

northeast in upside down, and were severely

burned. The trees on the south-southwest side

of the main components were cut down

halfway, and the elevation angle of the cut part

measured from the position of the propeller was

at about 60°.

The right wing was broken halfway and

found lying with its top surface facing up, on the ground of

a slope over the ridge about 40 m away in a straight

distance on the west side of the main components. The

right wing was entirely burned, particularly the fracture

surface was burned at high temperature, and therefore,

the metal was melted and its color changed to white.

The broken fuselage aft was found on a slope over the

ridge about 60 m away in a straight distance on the

southwest side of the main components. With its front part

was grounded, there was no trace of fire and the electrical

wirings were extended toward the main components. The

antenna of the emergency locator transmitter (ELT)

installed in the fuselage aft had fallen off.

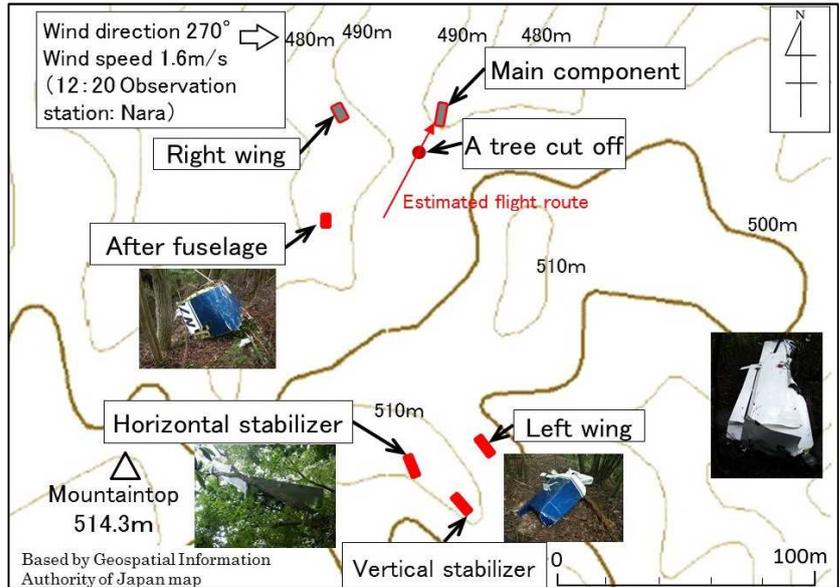


Figure 7: condition of the Aircraft scattering

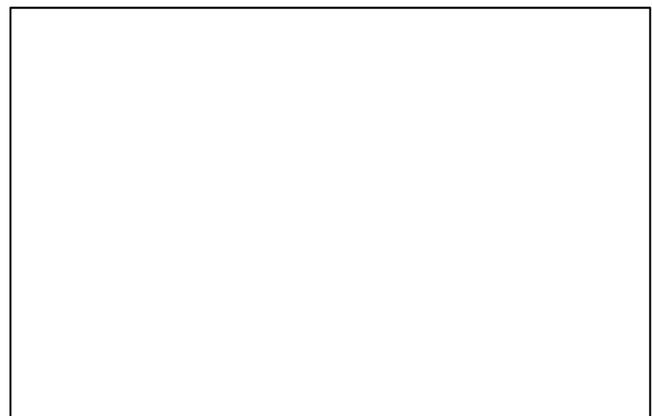


Figure 8: main components

Figure 9: cut trees





























































































































