

AI2009-3

**AIRCRAFT SERIOUS INCIDENT  
INVESTIGATION REPORT**

**CHINA SOUTHERN AIRLINES CO., LTD.**

**B 2 2 9 4**

**ALL NIPPON AIRWAYS CO., LTD.**

**J A 8 3 9 4**

**March 27, 2009**

**Japan Transport Safety Board**

The investigation for this report was conducted by Japan Transport Safety Board, JTSB, about the aircraft serious incident of CHINA SOUTHERN AIRLINES, AIRBUS A319 registration B2294 and ALL NIPPON AIRWAYS, AIRBUS INDUSTRY A320-200 registration JA8394 in accordance with the act for Establishment of Japan Transport Safety Board and Annex 13 to the Convention on International Civil Aviation for the purpose of determining causes of the aircraft serious incident and contributing to the prevention of accidents/incidents and not for the purpose of blaming responsibility of the serious incident.

This English version of this report has been published and translated by JTSB to make its reading easier for English speaking people who are not familiar with Japanese. Although efforts are made to translate as accurately as possible, only the Japanese version is authentic. If there is any difference in the meaning of the texts between the Japanese and English versions, the text in the Japanese version prevails.

Norihiro Goto,  
Chairman,  
Japan Transport Safety Board

# AIRCRAFT SERIOUS INCIDENT INVESTIGATION REPORT

1. CHINA SOUTHERN AIRLINES CO., LTD  
AIRBUS A319, B2294
2. ALL NIPPON AIRWAYS CO., LTD  
AIRBUS INDUSTRY A320-200,JA8394

3.2NM ON FINAL APPROACH PATH TO RUNWAY 36,  
CHUBU CENTRAIR INTERNATIONAL AIRPORT  
AT ABOUT 13:04 JST, NOVEMBER 11, 2007

March 13, 2009

Adopted by the Japan Transport Safety Board  
(Aircraft Sub-committee)

Chairman	Norihiro Goto
Member	Yukio Kusuki
Member	Shinsuke Endo
Member	Noboru Toyooka
Member	Yuki Shuto
Member	Akiko Matsuo

# 1. PROCESS AND PROGRESS OF AIRCRAFT SERIOUS INCIDENT INVESTIGATION

## 1.1 Summary of the Serious Incident

This occurrence covered by this report falls under the category of Clause 2, Article 166-4 of the Civil Aeronautics Regulations of Japan, as the case equivalent to “Attempted landing to an engaged runway by other aircraft” is classified as an aircraft serious incident.

An Airbus A319, registration B2294, operated by China Southern Airlines Co., Ltd., on its departure from Chubu Centrair International Airport as scheduled flight 698 on November 11, 2007, being instructed to hold short of runway on the taxiway A3S, crossed the stop line around 13:04 Japan Standard Time (JST)<sup>1</sup> and entered the runway, causing an aircraft on final with a landing clearance to execute a go-around abiding by the instructions from an air traffic controller.

Passengers on board of both aircraft sustained no injuries and both aircraft had no damage.

## 1.2 Outline of the Serious Incident Investigation

### 1.2.1 Investigation organization

Aircraft and Railway Accidents Investigation Commission designated an investigator-in-charge and two other investigators for this serious incident on November 11, 2007.

### 1.2.2 Representatives from foreign authorities

Representatives from China, the State of Operator and Registry of the aircraft involved in the serious incident, participated in the investigation.

### 1.2.3 Implementation of the investigation

November 12 and 16, 2007	Interviews
March 3, 2008 thru September 17, 2008	Information exchange with the Chinese investigation authority

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<sup>1</sup> Until otherwise stated all times are JST, based on a 24-hour clock.

#### **1.2.4 Comments from the parties relevant to the cause of the serious incident**

Comments were invited from the parties relevant to the cause of the serious incident.

#### **1.2.5 Comments from the participating state**

Comments were invited from the participating state.

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## 2 FACTUAL INFORMATION

### 2.1 History of the Flight

On November 11, 2007, B2294 (hereinafter referred to as “the Aircraft A”), as scheduled flight 698 of China Southern Airlines (hereinafter referred to as “the Company”), was supposed to depart from Chubu Centrair International Airport with 42 persons (the pilot-in-command (PIC), 7 crewmembers, and 34 passengers in total) on board.

The PIC was in the left seat as pilot-flying (PF) and a first officer was in the right seat as pilot-not-flying (PNF).

The Aircraft A, while it was rolling down the taxiway B, requested an intersection departure (a departure from any runway intersection except the end of the runway) to a tower controller (hereinafter referred to as “the Tower”) following the preceding aircraft ahead of it. The Tower responded to this request saying “A3S available but hold short of runway 36.” The Aircraft A read back the Tower’s instruction.

The Tower issued a landing clearance to an incoming aircraft (an Airbus A320-200, registration JA8394, hereinafter referred to as “the Aircraft B”) which was on final about 5nm to the runway, however, the Tower spotted the Aircraft A entering the runway, and so ordered the Aircraft B to execute a go-around. At this moment the Aircraft B was around 3.2nm away from the runway end.

The Aircraft A’s flight plan submitted to the Chubu Airport Office, Osaka Regional Civil Aviation Bureau of the Ministry of Land, Infrastructure, Transport and Tourism was outlined below:

Flight rules: IFR, Departure Aerodrome: Chubu Centrair International Airport, EOBT: 13:10, Cruising speed: 463kt, Cruising altitude: FL320, Route: HIKNE (reporting point) - YME(Miyazu VOR/DME)-V59-JEC(Miho VOR/DME)-B332-IGRAS (reporting point)-other points beyond are omitted, Destination Aerodrome: Shenyang Taoxian International Airport, Total EET:2 hours 23 minutes, Endurance: 3 hours 30minutes, POB: 40<sup>2</sup>

#### 2.1.1 History of the Flight based on the DFDR records, ATC communication records and other data

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<sup>2</sup> This value differs from the one described in 2.1, however, this was stated in the filed flight plan.

The record of the Digital Flight Data Recorder (hereinafter referred to as “DFDR”), ATC communications records, records of the Airport Surface Detection Equipment, radar track records and the statements of The Tower suggest the situation of the Aircraft A, from the commencement of the taxiing to its takeoff, and that of the Aircraft B developed as follows.

Around 13:00:03	After the push-back, the Aircraft A reported to commence taxiing.
Around 13:00:30	The Aircraft A started taxiing via E5, B and A1 to runway 36.
Around 13:02:37	The Aircraft A changed frequency to the Tower.
Around 13:03:21	The Aircraft A requested to use E3.
Around 13:03:27	The Tower instructed to taxi to A1.
Around 13:03:40	The Tower spotted the Aircraft A making a right turn to B3. The Tower instructed the Aircraft A to enter A1 by saying “CSN698, left turn to A and A1.”
Around 13:03:44	The Aircraft A expressed its intention to enter the runway by saying “Roger A, A1. How about this position enter the runway?”
Around 13:03:51	The Tower authorized to use A3S and instructed the Aircraft A to hold short of runway 36, by saying “CSN698, A3S available, but hold short of runway 36.”
Around 13:03:56	The Aircraft A made a read-back by saying “Roger, hold short of runway 36, thank you, sir, CSN698”.
Around 13:04:05	The Tower issued a landing clearance to the Aircraft B approaching runway 36.
Around 13:04:20	The Tower visually spotted the Aircraft A crossing the stop line and issued a go-around to the Aircraft B. At this moment, the Aircraft B was 3.2nm away from the runway and its altitude was around 1,140ft.
Around 13:04:34	The Tower instructed the Aircraft A to enter the runway and prepare for takeoff.
Around 13:06:34	The Aircraft A reported its completion of takeoff

preparation to the Tower, then received a takeoff clearance and took off.

(See Attachment 1)

### **2.1.2 Statements of the PIC and the first officer of the Aircraft A, the PIC of the Aircraft B and the Tower.**

#### **(1) The PIC, the Aircraft A**

This is my first visit to Chubu Centrair International Airport.

At the time of the incident, I was PF and the first officer was in charge of communications.

The reason I made a right turn to B3 was that I saw a preceding aircraft make an intersection departure. Because my aircraft's takeoff weight was light with only 34 passengers, I decided to follow the suit. I made the decision before I made a right turn to B3. The Tower responded with "affirmative", so I interpreted that to be the permission to enter the runway. After that I heard no instructions to stop. I cannot recall the first officer's hold-short-of-runway read-back, if you say I should have heard it. The reason I stopped short of the runway was that the TCAS warned us of an incoming aircraft.

The reason I let the radio communications slip from my attention was not the aircraft trouble which distracted my attention.

#### **(2) The First Officer, the Aircraft A**

This is my third flight to Chubu Centrair International Airport.

The first designated taxi route was E4-B-runway 36. Because our push-back ended orienting to north, the route was changed to E5-B-runway 36. I think I changed the radio frequency to the Tower from the Ground controller when we neared B3. Then I saw a small aircraft take off after taxiing through A3S. Our aircraft's takeoff weight was light due to small number of passengers, namely 34, the PIC directed me to ask the Tower to use A3S. I requested the Tower to turn right to B3 although it was against our given taxi instructions.

I was not directed to hold short of runway. After saying "Affirm" the Tower said something, but I can not recall. Both of us interpreted that the Tower affirmed our request to enter the runway.

The visibility was good with small amount of low cloud so that I could not visually confirm the incoming aircraft. TCAS warning made us to stop. The Tower did not instruct us to stop. Although the aircraft did not jut into the runway,



it was very close to the runway when it stopped. Because I was looking for the Jeppesen Airport Plan View I had no idea of precise position of the aircraft. The aircraft and radios were in good condition.

### (3) The PIC, the Aircraft B

When we received a go-around instruction we were around 4nm away from the runway and altitude was around 1,200ft. I was PNF then. It appeared that an aircraft was jutting into the runway but I could not figure out to what extent.

After the go-around we flew as directed by the Radar controller and landed 15 minutes later.

### (4) The Tower

My work shift began at 7:00 and ended at 15:30. I assumed the Tower's duty some time after 12:20. It was not the busy traffic time frame when the incident occurred.

The Aircraft A was instructed to roll down taxiway B to the end and turn right to enter the runway and takeoff. When I looked at the Aircraft A, it was turning right to taxi way B3. So I instructed the Aircraft A to proceed a little and turn left to enter the taxi way A. However, when the Aircraft A slowed down its speed to almost a halt, the Aircraft A requested an intersection departure. I responded that it was available but instructed the Aircraft A to hold short of the runway.

Next time I looked at the Aircraft A, its nose seemed to cross the stop line seemingly no intention of slowing down, and soon it became positive to cross the line. So I instructed the Aircraft B to execute a go-around. Just after that the Aircraft A came to a halt very close to the runway.

The Aircraft A's preceding aircraft was a twin-propeller-driven aircraft bound for Fukuoka, and this aircraft used A3S for intersection departure. Because this aircraft and the Aircraft A used the same departure procedure, considering the proper separation between them I had no intention of letting the Aircraft A takeoff before the Aircraft B's landing.

Although wind and departing aircraft's readiness are involved and it is a very delicate decision, generally speaking, if a departing aircraft is on runway end and ready for takeoff while an incoming aircraft is 6 to 7nm away from the runway, I would let the former aircraft start takeoff roll.

When I instructed the Aircraft B to execute a go-around, its location was about 4nm from the runway on the radar screen in the tower. If the Aircraft B was

on ILS course its altitude should be around 1,200ft. Both aircraft had ample safety margin because I instructed the go-around when the Aircraft B was 4nm on final, not on short final. There were no aircraft approaching immediately after the Aircraft B.

The weather condition that day was good and I could visually see the aircraft on the ground with ease so that there was no need to depend on ASDE.

I have been working here since the opening of this airport. There were couple of occasions where I wondered whether the Company's pilots really understood my intention, however, there were no cases where they acted against my instructions.

I thought the English capabilities of the pilots in question were no different from other pilots and I did not think them peculiar. However, in spite of its given taxiway, they requested an intersection departure, making me think the request strange.

This serious incident<sup>3</sup> occurred around 13:04 November 11, 2007, on a final approach path to runway 36 around 3.2nm from its approach end.  
(See Figures 1, 2 and 3)

## 2.2 Personnel information

(1) PIC, the Aircraft A	Male, Age 35
Airline transport pilot certificate (Airplane)	Issued on February 3, 2004
Type rating for Airbus A321	Issued on May, 10, 2005
Class 1 aviation medical certificate	
Validity	September 30, 2008
Total flight time	9,274 hours 00 minutes
Flight time in the last 30 days	60 hours 00 minutes
Total flight time on the type of aircraft	2,254hours 00minutes
Flight time in the last 30 days	60 hours 00 minutes
(2) First officer, the Aircraft A	Male, Age 36
Commercial pilot certificate (Airplane)	Issued on May 25, 2004

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<sup>3</sup> While the Aircraft B was on final with a landing clearance, the Aircraft A with the instruction of holding short of the runway intruded into the runway. This situation was interpreted as the attempted approach to the occupied runway by the Aircraft A and Clause 2, Article 166-4 of the Civil Aeronautics Regulations of Japan applied to this case.

Type rating for Airbus A321	Issued on December 11, 2003
Class 1 aviation medical certificate	
Validity	September 30, 2008
Total flight time	6,054 hours 07 minutes
Flight time in the last 30 days	75 hours 00 minutes
Total flight time on the type of aircraft	3,680 hours 00 minutes
Flight time in the last 30 days	75 hours 00 minutes

### 2.3 Meteorological information

(1) The aviation weather observation data at Chubu Centrair International Airport was as follows: 13:00

Wind direction 350°, Wind velocity 14kt, Prevailing visibility 20km, Cloud amount 1/8, Cloud type Cumulus, Ceiling 2,500ft, Cloud amount 6/8, Cloud type Altostratus, Ceiling 9,000ft, Temperature 18°C, Dew point 12°C, Altimeter setting (QNH) 29.77inHg.

(2) The position of the sun around 13:00

The sun was positioned in south-south-west corner of the sky.

### 2.4 Communications

Communication among the Tower and the Aircraft A or B was normal.

### 2.5 Information on DFDR and Cockpit Voice Recorder

Both aircraft were equipped with DFDRs and Cockpit Voice Recorders (hereinafter referred to as “CVR”). DFDRs of both aircraft, capable of storing 25 hours of information, recorded information at the time of occurrence. However, both CVRs, capable of storing 2 hours of information, were over-written and no data was retrieved from them. Aircraft A’s DFDR is an Allied Signal’s product (part number 980-4700-042) and its CVR is a Honeywell’s product (part number 980-6022-001).

The DFDR time data was corrected by correlating NTT (Nippon Telegraph and Telephone Corporation) time signals recorded in the ATC communications with the VHF transmission keying data recorded in the DFDR.

### 2.6 Information on serious incident site

Chubu Centrair International Airport has a runway with a length of 3,500m and a width of 60m.

In case of an intersection departure from runway 36 via A3S, available takeoff distance is around 2,800m.

## **2.7 Questions answered by Chinese Investigation Authority on activities in the cockpit**

(1) Necessity to renew the takeoff data upon the decision of an intersection departure.

With ample runway remaining distance and light aircraft weight, both pilots did not renew takeoff performance and they inserted the figure on the signboard located at the A3S entrance into the Multi-purpose Control Display Unit (MCDU). The first officer had flown to/from this airport many times and had calculated intersection departure takeoff performance and there was no need for parameter change for an intersection departure.

(2) The reason the Aircraft A did not stop in front of the stop line after the first officer's read-back of "Hold short of runway." Whether the two pilots hear the landing clearance given to the Aircraft B or not.

When we started our investigation into this incident in the beginning and after our return from Japan, both pilots stated that they didn't remember the read-back of "Hold short of runway", however, they accepted the fact after listening to the recorded ATC communications.

Both pilots only noticed the words "A3S in use" after the request of the intersection departure, but didn't pay attention to the instruction "Hold short of runway." They were occupied with looking for the published material including a map and with inserting data into the MCDU.

As for the landing clearance for the Aircraft B, both pilots denied to have heard that.

(3) English ability of both pilots.

Both pilots possess the English radio telephony capabilities required by International Civil Aviation Organization (ICAO) and Civil Aviation Administration of China (CAAC).

## **2.8 Additional information**

### **2.8.1 The briefing given to both pilots of the Aircraft A at Chubu Centrair**

## International Airport

A designated person from the contract company provided the pre-departure briefing in the Aircraft A on latest weather and NOTAM.

### 2.8.2 Meaning of the terms, “Affirm” and “Available”

The term “Affirm” is stipulated to mean “yes” in the volume II, ICAO Annex 10 (Aeronautical Telecommunications).

The term “Available” is not found in the above mentioned document, however, in Chapter 12. Phraseologies, ICAO Doc 4444 (Procedure for Air Navigation Services) gives some usages such as “PRECISION APPROACH NOT AVAILABLE”. Oxford Dictionary of English second edition published in 2003 gives the definition of “Available” as “able to be used”.

### 2.8.3 Renewal of the navigational data upon takeoff

The Company’s regulation requires pilots to renew takeoff runway data for precise air navigation.

### 2.8.4 Runway-remaining-distance sign

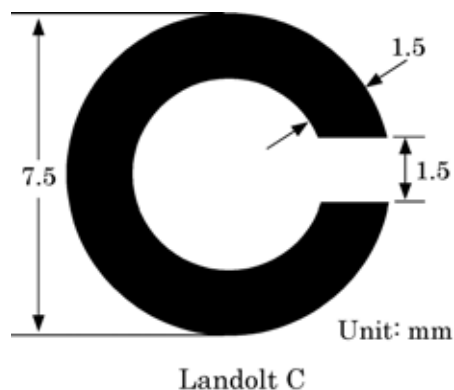
Runway remaining distance (with alphabets, numerals and arrows of 40cm long by 26cm wide on the signboard of 80cm long by 3m wide) is posted on A3S (A8N) some distance from the side of the runway. The sign is about 270m away from the taxiway B center line.

### 2.8.5 Visual acuity

As internationally standard visual acuity measurement index, Landolt C is used. This is a black C-shaped circle with a ratio of 5 to 1 to 1 among diameter, width of a line and opening.

“Visual acuity 1.0”, set forth in the standard for visual acuity, class 1 medical aviation certificate means the visual acuity in which two points separated by 1 ark minute ( $1^\circ/60$ ) can be correctly identified. When viewed from 5m away, the gap in Landolt C shown here corresponds to 1 ark minute.

In order to check visual acuity 1.0 with an examinee 270m away from the Landolt C, the Landolt C, when calculated with proportion,



should be as big as 40.5cm in diameter and 8.1cm for the opening respectively.

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## 3 ANALYSIS

### 3.1 Airman competence certificate

The PIC and the first officer of the Aircraft A held valid airman competence certificates and valid aviation medical certificates.

### 3.2 Analysis

#### 3.2.1 Development prior to the occurrence

The ATC communications record shows that the first officer of the Aircraft A contacted the Tower saying “Tower, CSN698, how about use E3?” It is considered probable that the transmission was made as an erroneous communications confusing B3 and E3, because the E3 was a taxi way in the parking area and he mentioned that he requested to turn right to B3. The Tower’s instruction was to taxi to A1, reminding the Aircraft A to follow the given route. Then the captain steered the Aircraft A and entered B3. This action was against the Tower’s direction and it is considered highly probable that it was made based on the PIC’s intention of making an intersection departure. Responding to the Tower’s instruction of “CSN698, left turn to A and A1”, the Aircraft A finally expressed its intention of making an intersection departure and requested it by saying “Roger, A, A1. How about this position enter the runway?” The Tower responded and made the A3S’s use available and instructed to stop short of the runway by saying “A3S available but hold short of runway 36.” The Aircraft A read back, “Roger, hold short of runway 36, thank you, sir, CSN698”, however, the Aircraft A did not stop in front of the stop line.

At this moment, it is considered probable that both pilots could have heard a landing clearance given to the Aircraft B on the same Tower frequency, however, they denied it.

Both pilots of the Aircraft A used the term “Affirm” in the statements, and stated that their interpretation of this term was a permission to enter the runway. As described in 2.8.2, “Affirm” means “Yes” and there are cases where it means permission depending on situations. However, the term “Affirm” was not recorded in the ATC communications record. The Tower said “A3S available” to convey the message that the use of A3S is available. However, the Tower didn’t permit entering the runway by saying “but hold short of runway 36.”

The phrase “A3S in use” stated in the response from Chinese authority is

not found in the ATC communications record. This is considered probable to be an expression that both pilots interpreted so.

### **3.2.2 Situational development of both pilots**

It was the first time for the PIC to visit Chubu Centrair International Airport this time, however, it is considered probable that he did not have to pay much attention to taxiing during off-peak hours, following simple taxiway layout. It is considered probable that he paid his attention more on giving directions to the first officer and/or data insertion into MCDU rather than ATC communications, then he failed to listen to the ATC instruction “Hold short of runway 36”, and its read-back by the first officer or landing clearance later given to the Aircraft B.

It is considered possible that the PIC may have misinterpreted “A3S available” as a permission corresponding to the question “How about this position enter the runway?”, or he misheard “Available” for “Affirm” and had a wrong interpretation that the permission to enter the runway was given, then he did not stop the aircraft short of the stop line. In case of failed execution of safety basics to be described in section 3.2.3, such as monitoring the communications between the Tower and the Aircraft B, TCAS becomes the only measure to know the situation of the Aircraft B in relation to the Aircraft A. Therefore it is considered probable that the captain stopped the aircraft short of the runway noticing the approach of Aircraft B by the TCAS warning as described in 2.1.2.(1).

On the other hand, the first officer stated that he had no idea where the aircraft stopped before entering the runway because he was looking for a map. According to the response from the Chinese authority, and the set procedure by the Company described in 2.8.3, it is considered highly probable that he had to insert runway remaining distance into the MCDU, although the renewal of takeoff data was not necessary.

Suppose both pilots’ visual acuity is 1.0, it is considered probable that they were able to identify numerals on the signboard because the letters on the board which provide runway remaining distance are as big as the calculated Landolt C, even if they looked at them 270m away from the entrance of B3. However the first officer maintained that he was looking for an Airport Plan View, it is considered possible that he was not able to identify the numerals. As a reason for his inability, it is considered possible that the sun was in the south-south-west corner of the sky and the signboard facing him was in the shade, making it difficult for him to identify



numerals.

Because the first officer's attention was solely directed to insertion of data into the MCDU, it is considered probable that his read-back of "Roger, hold short of runway 36, thank you sir, CSN698" was done absent-mindedly, and he failed to listen to the landing clearance later given to the Aircraft B.

### **3.2.3 Basics for securing safety**

This serious incident occurred triggered by the decision made by the PIC of the Aircraft A during his taxiing for takeoff, against his prior takeoff plan.

The cockpit situation is unknown due to the overwritten CVR records, however, it is considered highly probable that the basics of safety assurance, such as visual look-out for aircraft on final and audio monitoring of the landing clearance given to the incoming aircraft, were not observed properly judging from the PIC's statement that he stopped the aircraft in front of the runway responding the TCAS warning. If these were carried out properly, it is considered highly probable that the PIC could have stopped the aircraft in front of the stop line, and this serious incident didn't occur, even if the first officer's read-back was done absent-mindedly.

### **3.2.4 The severity of the serious incident**

At the time of the Aircraft B's go-around, the distance to the Aircraft A was about 3.2nm as described in 2.1, and the visibility was good.

In light of the runway incursion severity classification stipulated in the ICAO Runway Incursion Prevention Manual (Doc 9870), this incident falls in the classification of C (an incident characterized by ample time and/or distance existed to avoid a collision).

(See Attachment 2)

## 4 PROBABLE CAUSE

It is considered highly probable that this serious incident occurred due to the Aircraft A's intrusion into the runway without stopping in front of the stop line laid before the runway, against the instruction of the Tower, while the Aircraft B was on final with the landing clearance.

It is considered probable that the Aircraft A's intrusion into the runway against the controller's instruction was the result of the following contributing events: after the impromptu change of mind for intersection departure against originally planned departure during taxiing; the aircraft requested a new takeoff procedure to the Tower with insufficient preparation for it; at this moment the PIC's attention was overly directed to takeoff preparation so that he failed to monitor the landing clearance for the Aircraft B and misinterpreted the information "A3S available" as a permission to enter the runway.

Figure 1 Estimated Taxi Route

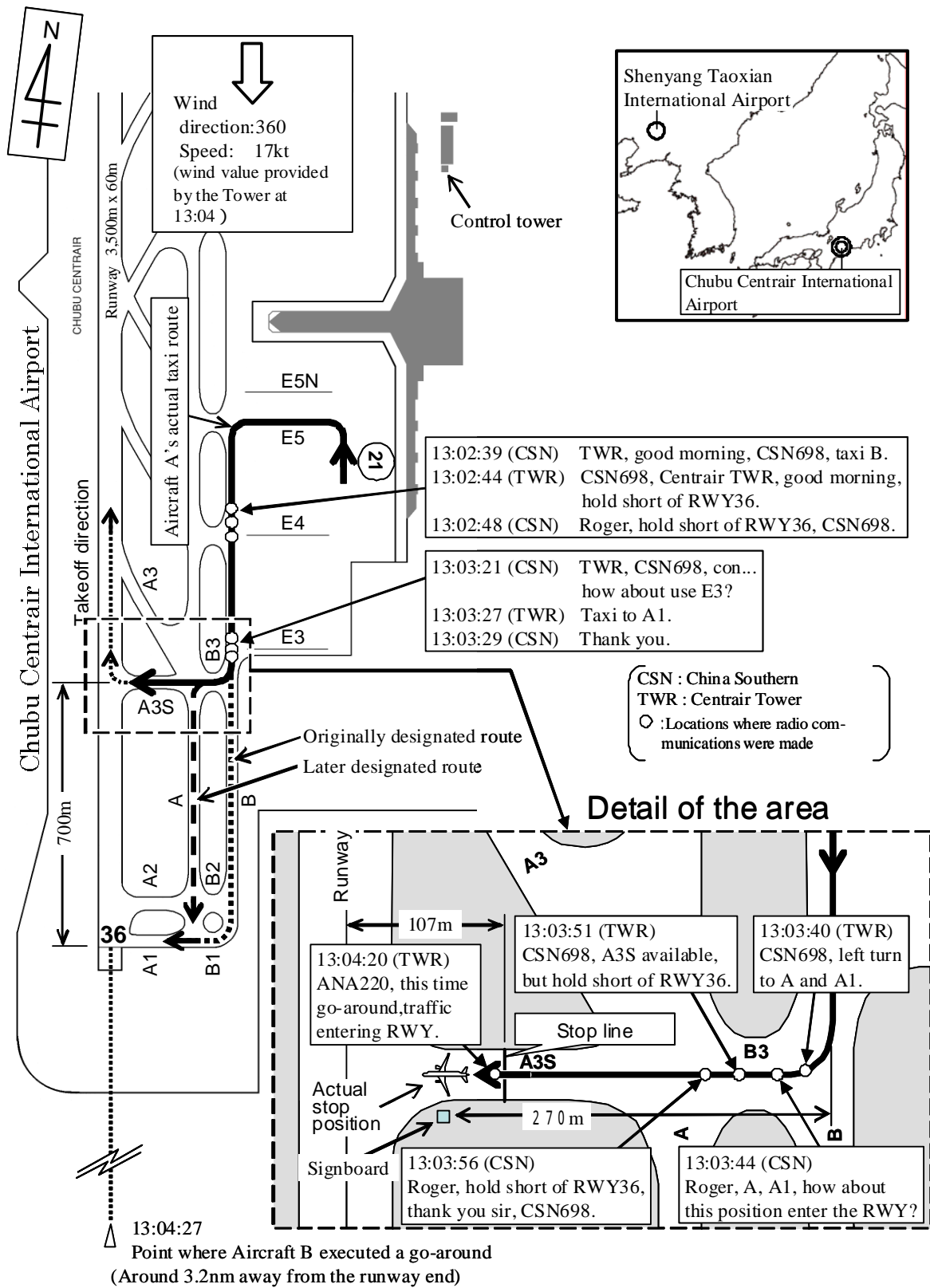


Figure 2 Airbus A319, three angle view

Unit : m

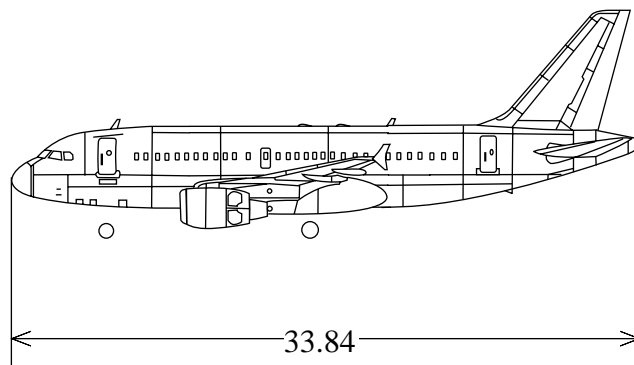
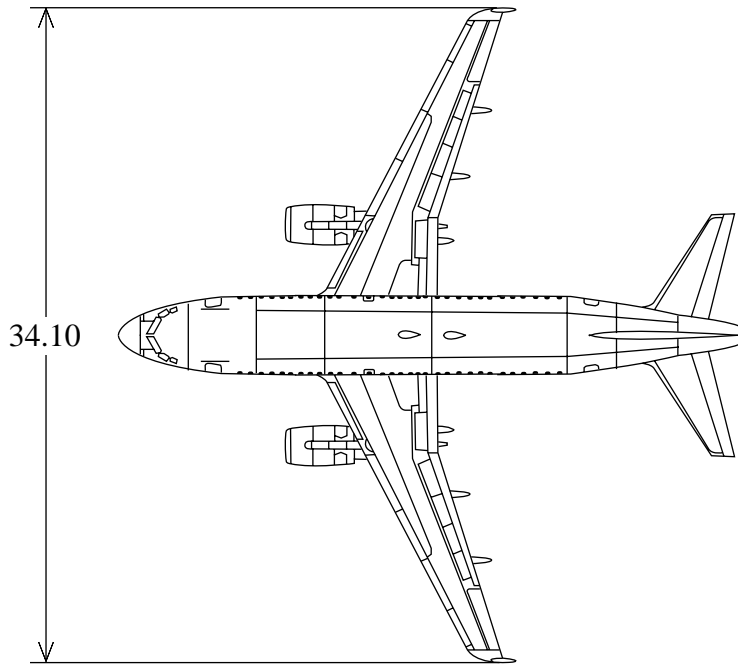
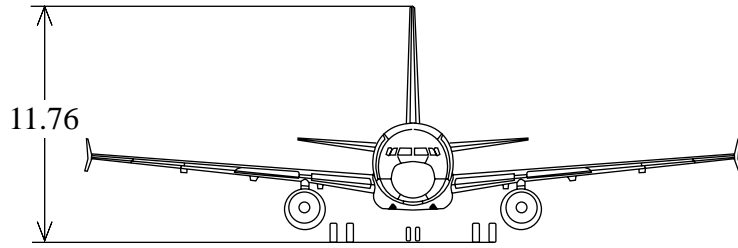
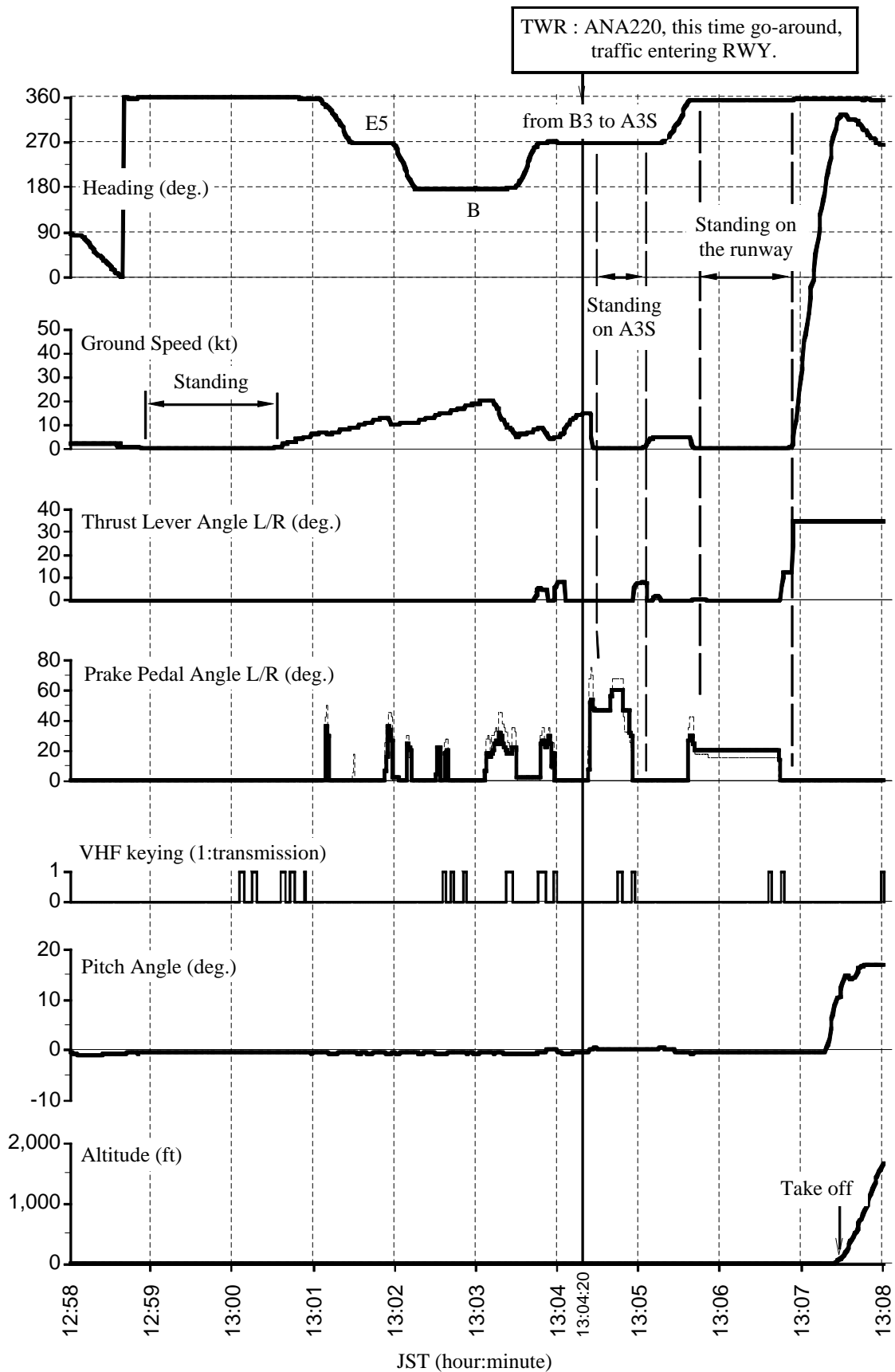


Figure 3 DFDR Records of Aircraft A



## Attachment 1 ATC Communications

JTS	Sender	Message
12:56:10	CSN	Ground, good morning, CSN698, spot 21, ready for start, sir.
12:56:16	GND	CSN698, Centrair Ground, push back to E, face to north.
12:56:23	CSN	Push back to E, face to north, CSN698.
12:57:47	ANA1833	Centrair Ground, good afternoon, ANA1833, spot 2, with C, request taxi.
12:57:54	GND	ANA1833, Centrair Ground, good afternoon, runway36, taxi via D6N, B.
12:58:01	ANA1833	Runway36, D6N, B, ANA1833.
13:00:03	CSN	Ground, CSN698, ready for taxi.
13:00:08	GND	CSN698, runway36, taxi via E4, B.
13:00:13	CSN	E4, B, CSN698.
13:00:35	CSN	CSN698, confirm E5.
13:00:38	GND	CSN698, correction, taxi via E5, B.
13:00:42	CSN	Roger, E5, B, now we are facing north.
13:00:46	GND	All station, Centrair Ground, QNH 2977, 2977.
13:00:52	CSN	CSN698.
13:01:02	GND	ANA1833, contact Tower 118.85.
13:01:07	ANA1833	Roger, contact Tower 118.85, ANA1833.
13:02:30	GND	CSN698, contact Tower 118.85.
13:02:35	CSN	11885, good day.
13:02:36	GND	Good day.
	CSN	(Frequency change) GND to TWR
13:02:39	CSN	Tower, good morning, CSN698, taxi B.
13:02:44	TWR	CSN698, Centrair Tower, good morning, hold short of runway36.
13:02:48	CSN	Roger, hold short of runway36, CSN698.
13:03:21	CSN	Tower, CSN698, con(firm)... how about use E3?
13:03:27	TWR	Taxi to A1.
13:03:29	CSN	Thank you.
13:03:40	TWR	CSN698, left turn to A and A1.
13:03:44	CSN	Roger, A, A1, how about this position enter the runway?
13:03:51	TWR	CSN698, A3S available, but hold short of runway36.
13:03:56	CSN	Roger, hold short of runway36, thank you sir, CSN698.
13:04:05	TWR	ANA220, runway36, cleared to land, wind 360 at 17.
13:04:10	ANA220	Runway36, cleared to land, ANA220.
13:04:20	TWR	ANA220, this time go-around, traffic entering runway.
13:04:23	ANA220	Roger, go-around, ANA220.
13:04:34	TWR	CSN698, this time.. arrival go around, so you are.. runway36, line up and wait.

13:04:43	CSN	Confirm line up and wait, CSN698?
13:04:47	TWR	Affirm, you are over runway stop line, so now enter runway, hold.. ah.. line up and wait.
13:04:53	CSN	Line up and wait, CSN698.
13:05:07	TWR	ANA220, this time contact Approach.
13:05:17	TWR	ANA220, contact Approach 121.05.
13:05:20	ANA220	12105, ANA220.
13:05:34	TWR	ANA1833, contact Departure.
13:05:37	ANA1833	Contact Departure, ANA1833.
13:06:34	CSN	Tower, CSN698 is ready.
13:06:38	TWR	CSN698, wind 350 at 17, runway36, cleared for take off.
13:06:44	CSN	Cleared for take off, CSN698.
13:07:54	TWR	CSN698, contact Departure.
13:07:57	CSN	Departure 120.0, good day, sir.
13:08:00	TWR	Good day.

Legend	
CSN	: China Southern 698 (the Aircraft A)
ANA220	: All Nippon 220 (the Aircraft B)
ANA1833	: All Nippon 1833 (the Aircraft preceded the Aircraft A)
GND	: Centrair Ground (121.8MHz)
TWR	: Centrair Tower (118.85MHz)

Note: This ATC transcription covers the time frame from the Aircraft A's first contact with the Ground to the end of contact with the Tower.

Blank lines contain ATC communications, however, they are omitted due to its irrelevancy with this incident.

## Attachment 2 Runway Incursion Severity Classification

Severity classification stipulated in ICAO Runway Incursion prevention Manual (Doc 9870) is as follows.

*Table 6-1 Classification*

<i>Severity Classification</i>	<i>Description *</i>
<i>A</i>	<i>A serious incident in which a collision is narrowly avoided.</i>
<i>B</i>	<i>An incident in which separation decreases and there is significant potential for collision, which may result in a time-critical corrective/evasive response to avoid a collision.</i>
<i>C</i>	<i>An incident characterized by ample time and/or distance to avoid a collision.</i>
<i>D</i>	<i>An incident that meets the definition of runway incursion such as the incorrect presence of a single vehicle, person or aircraft on the protected area of a surface designated for the landing and take-off of aircraft but with no immediate safety consequences.</i>
<i>E</i>	<i>Insufficient information or inconclusive or conflicting evidence precludes a severity assessment.</i>

*\* Refer to Annex 13 for the definition of "incident".*