

**FINAL**

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# NATIONAL TRANSPORTATION SAFETY COMMITTEE

Aircraft Accident Investigation Report

**Bali International Flight Academy  
Cessna 172; PK-ROI  
Letnan Kolonel Wisnu Airport,  
Buleleng, Bali  
Republic of Indonesia  
5 August 2012**



NATIONAL TRANSPORTATION SAFETY COMMITTEE  
MINISTRY OF TRANSPORTATION  
REPUBLIC OF INDONESIA  
2014

This Final report was produced by the National Transportation Safety Committee (NTSC), 3<sup>rd</sup> Floor Ministry of Transportation, Jalan Medan Merdeka Timur No. 5 Jakarta 10110, Indonesia.

The report is based upon the investigation carried out by the NTSC in accordance with Annex 13 to the Convention on International Civil Aviation Organization, the Indonesian Aviation Act (UU No. 1/2009) and Government Regulation (PP No. 62/2013).

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## ABBREVIATIONS AND DEFINITIONS

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AMSL	:	Above Mean Sea Level
BIFA	:	Bali International Flight Academy
°C	:	Degrees Celsius
CASR	:	Civil Aviation Safety Regulation
DGCA	:	Directorate General Civil Aviation
ICAO	:	International Civil Aviation Organization
ICAI / STPI	:	Indonesia Civil Aviation Institute / <i>Sekolah Tinggi Penerbangan Indonesia</i>
IIC	:	Investigator in Charge
Km	:	Kilometer(s)
KNKT / NTSC	:	<i>Komite Nasional Keselamatan Transportasi</i> / National Transportation Safety Committee
Kts	:	Knot (s)
LT	:	Local Time
NM	:	Nautical mile(s)
PPL	:	Private Pilot License
TAC	:	Temporary Airman Certificate
UTC	:	Universal Time Coordinate
WITA	:	<i>Waktu Indonesia Tengah</i> / Central Indonesian Standard Time

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## SYNOPSIS

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On 5 Agustus 2012, a Cessna 172 aircraft registration PK-ROI operated by PT Bali International Flight Academy (BIFA) was performing mutual flight training on a cross country flight which from Letnan Kolonel Wisnu Airport - Blimbingsari Airport and return to Letnan Kolonel Wisnu Airport.

At 05.50 UTC the aircraft departed Blimbingsari Airport to Letnan Kolonel Wisnu Airport. At Labuan point, the aircraft descend to 1000 feet to join right downwind runway 32.

At altitude 500 feet the aircraft was at configuration of flap 30, airspeed 65 knot and reduce to 60 knot on short final. The pilot reduced power to idle. Afterward the pilot felt the aircraft sank and impacted to the tree. The pilot attempted to go around and opened the power. The aircraft veered to the left and impacted to the ground.

The first impact mark was found on the top of a tree on short final runway 32 with approximate height of 10 meters. Prior to rest at last position, two impact marks found on the airport fence and a tree. The aircraft stopped on the left runway 32 about 59 meter from centre line of runway.

The occupants suffered minor injuries. The aircraft substantially damage. There was minor damage to a house.

Both pilots held valid license and medical certificate, and have flight experienced approximately 91 flying hours on type.

The aircraft was airworthy prior to impact.

The pilot started to put the engine power to idle while on position abeam Honda store was accordance to his perception of correct approach procedure. Refer to the fact of the first impact position and the sink after power reduction was highly possible that the aircraft speed was relatively low on short final.

The NTSC issued several safety recommendations to address safety issues identified during the investigation.

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# 1 FACTUAL INFORMATION

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On 5 Agustus 2012, a Cessna 172 aircraft registration PK-ROI operated by PT Bali International Flight Academy (BIFA) was performing mutual flight training on a cross country flight which was scheduled from Letnan Kolonel Wisnu Airport – Celukan Bawang – Singaraja - Kubutambahan - Singaraja - overhead Letkol Wisnu - Blimbingsari Airport (touch and go) and return to Letnan Kolonel Wisnu Airport.

The aircraft took off from Letnan Kolonel Wisnu Airport at 0300 UTC with cruising altitude 3000 and 2000 feet according to the direction of flight. At Blimbingsari Airport the student pilots make full stop landing excercises for meal and canceled their Ramadhan fasting.

At 05.50 UTC the aircraft departed Blimbingsari Airport to Letnan Kolonel Wisnu Airport. The cruising altitude 1600 feet and the aircraft speed 95 kts. At Labuan point, the aircraft descend to 1000 feet to join right downwind runway 32.

On final runway 32, the student pilots received information from AFIS officer that the surface wind 320/10 kts. At altitude 500 feet the aircraft was at configuration of flap 30, airspeed 65 knot and reduce to 60 knot on short final. The pilot reduced power to idle. Afterward the pilot felt the aircraft sank and impacted to the tree. The pilot attempted to go around and opened the power. The aircraft veered to the left and impacted to the ground.

The first impact mark was found on the top of a tree on short final runway 32 with approximate height of 10 meters. Prior to rest at last position, two impact marks found on the airport fence and a tree. The aircraft stopped on the left runway 32 about 59 meter from centre line of runway.

The occupants suffered minor injuries. The aircraft substantially damage. There was minor damage to a house.

Both pilots held valid license and medical certificate, and have flight experienced approximately 91 flying hours on type.

The aircraft was airworthy prior to impact.

The student pilots informed that they were taught by the instructors that to perform approach on runway 32 Letnan Kolonel Wisnu Airport the target over high tension electrical cable should be 500 feet and on short final, while abeam Honda store start reduces power for landing. Honda store was located on the right side of the final track at approximately 1 mile from the runway threshold. During this accident flight, the student put the power to idle while position abeam Honda store.



Figure 1: The aircraft has substantial damaged

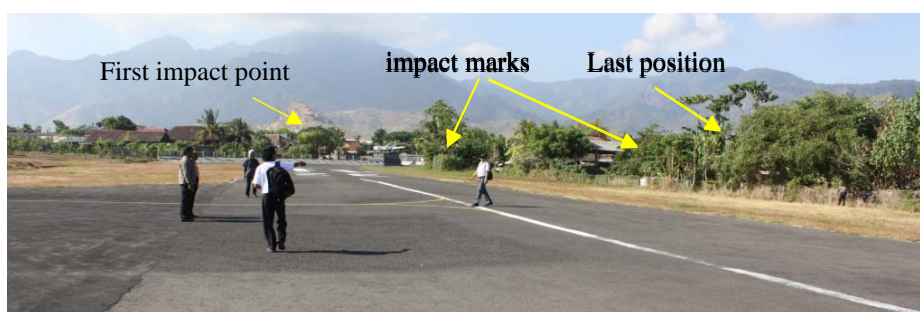


Figure 2: Impact points founds on the accident site

### 1.1.1 Student Pilot 1

Gender	: Male
Date of Birth	: 29 April 1989
Nationality	: Indonesia
Marital status	: Single
Date of joining academy	: 07 December 2011 (as student)
License	: PPL
Validity	: 08 Agustus 2012 (TAC)
Aircraft type rating	: Cessna 172
Instrument rating	: None
Medical certificate	: Class 2
Last of medical	: 13 July 2012
Validity	: 13 July 2013
Medical limitation	: None



**Flying experience**

Total hours	: 91 hours 35 minutes
Total on type	: 91 hours 35 minutes
Last 90 days	: 84 hours 01 minutes
Last 60 days	: 91 hours 35 minutes
Last 24 hours	: 03 hours 30 minutes
This flight	: 20 minutes

**1.1.2 Student Pilot 2**

Gender	: Male
Date of Birth	: 26 May 1987
Nationality	: Indonesian
Marital status	: Single
Date of joining academy	: 7 December 2011 (as student)
License	: PPL
Validity	: 08 Agustus 2012
Aircraft type rating	: Cessna 172
Instrument rating	: None
Medical certificate	: Class 2
Last of medical	: 18 November 2011
Validity	: 18 November 2012
Medical limitation	: None

**Flying experience**

Total hours	: 91 hours 15 minutes
Total on type	: 91 hours 15 minutes
Last 90 days	: 80 hours 42 minutes
Last 60 days	: 51 hours 40 minutes
Last 24 hours	: 4 hours
This flight	: 20 Minutes

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## 2 ANALYSIS

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The analysis part of this report will discuss the relevant issues resulting in the aircraft sank and impacted the tree on short final runway 32 on 5 August 2012, at Letnan Kolonel Wisnu Airport. The investigation determined that there were no issues with the aircraft and all systems were operating normally.

The analysis will therefore focus on the following issue of high sink rate on short final.

### 2.1 High sink rate on short final

The instructor information of how to perform approach on runway 32 by achieving target at certain position by visual reference, including the position to start reduce power for landing, should consider as reference only. The correct performance should base on the glide path angle. This instructor information has become mandatory target for the student.

The pilot started to put the engine power to idle while on position abeam Honda store was accordance to his perception of correct approach procedure. The time of the reducing power for landing is depend on the aircraft height, speed and position to the target touch down point.

On short final, the pilot noticed that the aircraft speed was 60 knot and reduced power to idle. Afterward the pilot felt the aircraft sank and impacted to the tree. The aircraft was sinking most likely due to reduce in lift as result of the power reduction. The possibility of sinking would be greater at lower aircraft speed.

Refer to the fact of the first impact position and the sink after power reduction was highly possible that the aircraft speed was relatively low on short final.

The success of pilot attempt to go around after impact was depend on the damage to the aircraft as result of the impact and the moment effect of the impact to the aircraft movement. In this accident, the attempt for go around was less likely to be successful.

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## 3 CONCLUSIONS

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### 3.1 Findings

- The flight was students mutual flight training on cross country flight exercise;
- Both pilots held valid license and medical certificate according to the current Indonesia regulation.
- The aircraft was airworthy prior to impact according to the current Indonesia regulation.
- The aircraft sank after engine power reduced to idle and impacted to a tree top on short final.
- The pilot attempted to go around but was unsuccessful.

### 3.2 Contributing Factors<sup>1</sup>

The A symmetric lift after first hit the tree. The aircraft yawed to the left hit fence and tree, pitching up, the nose was dropped and the aircraft impact to the ground.

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<sup>1</sup> “Contributing Factors” is defined as events that might cause the occurrence. In the case that the event did not occur then the accident might not happen or result in a less severe occurrence.

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## **4 SAFETY ACTION**

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At the time of issuing this draft final investigation report, the National Transportation Safety Committee had been informed of safety actions resulting from this occurrence.

### **4.1 PT Bali International Flight Academy**

The National Transportation Safety Committee has been informed several safety actions taken by PT Bali International Flight Academy which was published in their internal letter Number: 108/BIFABALI/ext/VIII/2012 dated 6 August 2012. The safety actions were as follows:

- Temporary grounded for all student pilots for internal evaluation by Flight Department related to the policy of student mutual flight.
- Recommend to all student pilots not to perform a flight after 10 AM while on fasting.

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## **5 SAFETY RECOMMENDATIONS**

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As a result of this investigation, the National Transportation Safety Committee issued safety recommendations to address safety issues identified in this report.

The safety recommendation is addressed to:

### **5.1 PT Bali International Flight Academy**

- a. The instructor information of how to perform approach on runway 32 by achieving target at certain position by visual reference, and refer to the fact of the first impact position and the high sink after power reduction was highly possible that the aircraft speed was relatively low on short final should consider as reference only. Refer to this particular case the NTSC recommends to review the teaching method of how to perform approach by achieving approach glide path.
- b. Any instructor information such as visual reference approach guidance may become mandatory target for the student. Following to this information the NTSC recommends that any necessary instructor information should be documented and included on the training syllabus as part of the training and practices for student pilot.
- c. If it is possible to minimize the risk related to approach path guidance, the NTSC consider suggesting the installation of any means of glide path reference guidance.