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**NATIONAL
TRANSPORTATION
SAFETY
COMMITTEE**

Aircraft Accident Investigation Report

**Indonesian Civil Aviation Institute
PK-AGU
Socata Tobago TB-10
Budiarto Airport, Curug
Tangerang, Banten
Republic of Indonesia**

19 April 2010



**NATIONAL TRANSPORTATION SAFETY COMMITTEE
MINISTRY OF TRANSPORTATION
REPUBLIC OF INDONESIA
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This Final Report was produced by the National Transportation Safety Committee (NTSC), Ministry of Transportation Building 3rd Floor, Jalan 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, Indonesia Aviation Act (UU No.1/2009), and Government Regulation (PP No. 3/2001).

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TABLE OF CONTENTS

TABLE OF CONTENTS	i
TABLE OF FIGURES	iii
GLOSSARY OF ABBREVIATIONS	iv
INTRODUCTION	1
SYNOPSIS	1
1 FACTUAL INFORMATION	2
1.1 History of the Flight	2
1.2 Injuries to Persons	3
1.3 Damage to Aircraft	3
1.4 Other Damage.....	3
1.5 Personnel information.....	3
1.5.1 The Flight Instructor.....	3
1.5.2 The Student Pilot	4
1.6 Aircraft information.....	4
1.6.1 Aircraft Data.....	4
1.6.2 Engines	5
1.7 Meteorological Information.....	5
1.8 Aids to Navigation.....	5
1.9 Communications	5
1.10 Aerodrome Information.....	6
1.10.1 General	6
1.10.2 Facility.....	6
1.11 Flight Recorders	6
1.12 Wreckage and Impact information	6
1.13 Medical and Pathological Information	7
1.14 Fire.....	7
1.15 Survival Aspects	8
1.16 Tests and Research	8
1.17 Organizational and Management Information.....	8
1.17.1 Indonesian Civil Aviation Institute	8
1.17.2 Budiarto Airport	8
1.18 Additional Information	8
1.19 Useful or Effective Investigation Technique	9

2	ANALYSIS	10
3	CONCLUSIONS	11
3.1	Findings	11
3.2	Causes.....	11
4	SAFETY ACTIONS	12
4.1	Budiarto Airport	12
5	SAFETY RECOMMENDATIONS	13
5.1	Budiarto Airport Authority	13
6	APPENDIXES	14

TABLE OF FIGURES

Figure 1: The engine was separated 15 meters from the main wreckage.....	2
Figure 2: Aircraft Accident Scheme	7

GLOSSARY OF ABBREVIATIONS

AD	:	Airworthiness Directive
AFM	:	Airplane Flight Manual
AGL	:	Above Ground Level
ALAR	:	Approach-and-Landing Accident Reduction
AMSL	:	Above Mean Sea Level
AOC	:	Air Operator Certificate
ATC	:	Air Traffic Control
ATPL	:	Air Transport Pilot License
ATS	:	Air Traffic Service
Avsec	:	Aviation Security
BMG	:	Badan Meterologi dan Geofisika
BOM	:	Basic Operation Manual
°C	:	Degrees Celsius
CAMP	:	Continuous Airworthiness Maintenance Program
CASO	:	Civil Aviation Safety Officer
CASR	:	Civil Aviation Safety Regulation
CPL	:	Commercial Pilot License
COM	:	Company Operation Manual
CRM	:	Cockpit Recourses Management
CSN	:	Cycles Since New
CVR	:	Cockpit Voice Recorder
DFDAU	:	Digital Flight Data Acquisition Unit
DGCA	:	Directorate General Civil Aviation
DME	:	Distance Measuring Equipment
EEPROM	:	Electrically Erasable Programmable Read Only Memory
EFIS	:	Electronic Flight Instrument System
EGT	:	Exhaust Gas Temperature
EIS	:	Engine Indicating System
FL	:	Flight Level
F/O	:	First officer or Copilot
FDR	:	Flight Data Recorder
FOQA	:	Flight Operation Quality Assurance
GPWS	:	Ground Proximity Warning System
hPa	:	Hectopascals
Hrs	:	Hours

ICAO	:	International Civil Aviation Organization
IFR	:	Instrument Flight Rules
IIC	:	Investigator in Charge
ILS	:	Instrument Landing System
Kg	:	Kilogram(s)
Km	:	Kilometer(s)
Kts	:	Knots (nm/hours)
Mm	:	Millimeter(s)
MTOW	:	Maximum Take-off Weight
NM	:	Nautical mile(s)
KNKT/NTSC	:	Komite Nasional Keselamatan Transportasi / National Transportation Safety Committee
PIC	:	Pilot in Command
QFE	:	Height above airport elevation (or runway threshold elevation) based on local station pressure
QNH	:	Altitude above mean sea level based on local station pressure
RESA	:	Runway End Safety Area
RPM	:	Revolution per Minutes
R/W	:	Runway
ROV	:	Remotely Operated Vehicle
SCT	:	Scattered
S/N	:	Serial Number
SSCVR	:	Solid State Cockpit Voice Recorder
SSFDR	:	Solid State Flight Data Recorder
TS/RA	:	Thunderstorm and rain
TAF	:	Terminal Aerodrome Forecast
TPL	:	Towed Pinger Locator
TSN	:	Time since New
TT/TD	:	Ambient Temperature/Dew Point
UTC	:	Universal Time Coordinate
VFR	:	Visual Flight Rules
VMC	:	Visual Meteorological Conditions

INTRODUCTION

SYNOPSIS

On 19 April 2010, a Socata Tobago TB-10 aircraft operated by Indonesian Civil Aviation Institute (Sekolah Tinggi Penerbangan Indonesia/STPI), registered PK-AGU was performing a touch and go training at Budiarto Airport. There were two persons on board, one flight instructor and one student pilot. The student pilot occupied the left seat.

The pilots requested a taxi clearance at 0810 LT (0110 UTC¹) and the aircraft take off used runway 30 at 0823 LT (0123 UTC).

During the second touch and go landing, the aircraft that tend to the left impacted a running motorcycle on runway. The aircraft then overturned to the left side runway 30, 65 meters from runway centerline and 638 meters from beginning of runway 30.

Both of motorcycle riders and the flight instructor were fatally injured. The student pilot was seriously injured.

The aircraft was substantially damaged.

¹ The 24-hour clock used in this report to describe the time of day as specific events occurred is in Coordinated Universal Time (UTC). Local time, Western Indonesian Standard Time (WIB) is UTC+ 7 hours.

1 FACTUAL INFORMATION

1.1 HISTORY OF THE FLIGHT

On 19 April 2010, a Socata Tobago TB-10 aircraft operated by Indonesian Civil Aviation Institute (Sekolah Tinggi Penerbangan Indonesia/STPI), registered PK-AGU was performing a touch and go training at Budiarto Airport. There were two persons on board, one flight instructor and one student pilot. The student pilot occupied the left seat.

The pilots requested a taxi clearance at 0810 LT (0110 UTC) and the aircraft takeoff used runway 30 at 0823 LT (0123 UTC).

Eight minutes later, at 0831 LT (0131 UTC) the aircraft performed the first touch and go.

During the second circuit of touch and go, the aircraft bounced and tend to the left then hit to a running motorcycle on runway. The aircraft overturned to the left side runway 30, 65 meters from runway centerline and 638 meters from beginning of runway 30.

At the time of accident, both of motorcycle riders were fatally injured. About three months later the flight instructor was fatally injured and the student pilot was serious injured.

The aircraft was substantially damaged.



Figure 1: The engine was separated 15 meters from the main wreckage.

1.2 INJURIES TO PERSONS

Injuries	Flight crew	Passengers	Others	Total
Fatal	1	-	2	3
Serious	1	-	-	1
Minor	-	-	-	-
None				
TOTAL	2	-	2	4

1.3 DAMAGE TO AIRCRAFT

The aircraft was substantially damaged.

1.4 OTHER DAMAGE

The motorcycle was damaged due to impact with the aircraft.

1.5 PERSONNEL INFORMATION

1.5.1 The Flight Instructor

Gender : Male
Date of birth : 14 November 1982
Nationality : Indonesia
License : Commercial Pilot License
Date of issue : 28 April 2008
Valid to : 26 May 2010
Aircraft type rating : PA 28, C-23, TB-10, Cessna 172
Medical certificate : First Class
Date of medical : 26 November 2009
Valid to : 26 May 2010
Last proficiency check : 30 January 2010
Flying experience
Total hours : 982 hours 20 minutes
Total on type : 812 hours
Last 90 days : 205 hours 45 minutes
Last 30 days : 71 hours 15 minutes
Last 24 hours : 1 hours

1.5.2 The Student Pilot

Gender : Male
Date of birth : 23 September 1990
Nationality : Indonesia
License : Student Pilot Permit (SPP)
Date of issue : 21 October 2008
Valid to : 21 October 2010
Medical certificate : First Class
Date of medical : 18 March 2010
Valid to : 18 March 2011

Flying experience

Total hours : 10 hours
Total on this type : 10 hours
Last 90 days : 10 hours
Last 7 days : 3 hours
Last 24 hours : 1 hours

1.6 AIRCRAFT INFORMATION

1.6.1 Aircraft Data

Aircraft manufacturer : Aerospatial France
Aircraft model/type : Socata Tobago TB-10
Serial number : 1783
Year of manufacture : June 1996
Aircraft registration : PK-AGU
Certificate of Registration : 1736
Valid to : 05 July 2011
Certificate of Airworthiness : 1736
Valid to : 14 July 2011
Total time since new (TSN) : 3,371 hours 45 minutes
Cycles Since New (CSN) : 9,245 cycles

1.6.2 Engines

Engine type	: Piston engine
Manufacturer	: Lycoming
Model	: Lycoming 0-360-A1AD
Serial Number	: RL-34582-36E
TSN	: 3,377 hours 29 minutes
CSN	: 5,829 cycles
TSO	: 1,377 hours 19 minutes
CSO	: 2,795 cycles

1.7 METEOROLOGICAL INFORMATION

The weather information at Budiarto airport, reported on 19 April 2010 at 11:59:08 UTC was:

Surface wind	: 270°/05 knots
Visibility	: 12 Km
Present weather	: NIL
Cloud	: 3 CU / 1800
Temperature	: 28° C
Due Point	: 24
QNH	: 1011 milibar / 2987
QFE	: 1006 milibar / 2973

1.8 AIDS TO NAVIGATION

Not relevant to this accident

1.9 COMMUNICATIONS

At the time of the occurrence all the communication between aircraft PK-AGU and Budiarto ATC was normal.

1.10 AERODROME INFORMATION

1.10.1 General

Aerodrome Code	: WICB / BTO
Airport Name	: Budiarto Airport
Airport Address	: Budiarto Airport P.O BOX 08 Curug Tangerang 15810
Airport Owner	: Government of the Republic of Indonesia
Airport Authority	: The Technical Operating Unit of Budiarto Airport
Coordinates	: 06°17'36" S / 106°34'06"E
Elevation	: 150 feet
Runway	: 1,800 x 30 meters (RWY 12-30) 1,660 x 45 meters (RWY 04R-23L)
Azimuth	: 12 – 30 04R – 23L
AOC	: Adm.OC/034/2005

1.10.2 Facility

The Budiarto airport has the ATC transcript recorder facility. It was unserviceable at the time the occurrence.

1.11 FLIGHT RECORDERS

The aircraft was not equipped with a flight data recorder or cockpit voice recorder. Neither recorder was required by current Indonesian Civil Aviation Regulations.

1.12 WRECKAGE AND IMPACT INFORMATION

The aircraft bounced and tend to the left then hit to a running motorcycle on runway. The aircraft overturned to the left side runway 30, 65 meters from runway centerline and 638 meters from beginning of runway 30.

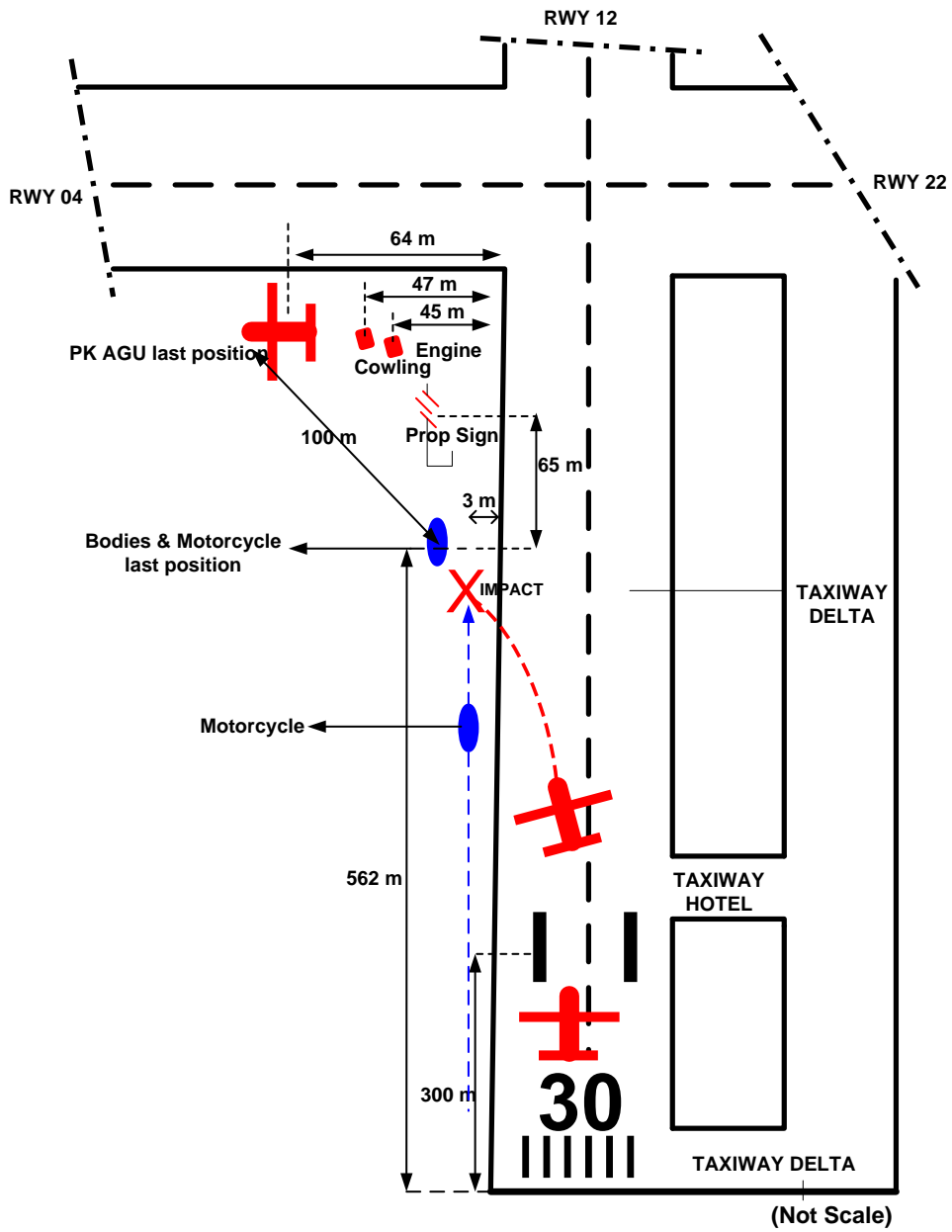


Figure 2: Aircraft Accident Scheme

1.13 MEDICAL AND PATHOLOGICAL INFORMATION

Not relevant to this accident.

1.14 FIRE

There was no evidence of pre or post impact fire.

1.15 SURVIVAL ASPECTS

After the aircraft impacted motorcycle, the engineers and the student pilots that were staying in the hangar were immediately deployed to evacuate both pilots from the aircraft to the hospital used ambulance.

1.16 TESTS AND RESEARCH

Not relevant to this accident.

1.17 ORGANIZATIONAL AND MANAGEMENT INFORMATION

1.17.1 Indonesian Civil Aviation Institute

Aircraft Owner : Indonesian Civil Aviation Institute
(Sekolah Tinggi Penerbangan Indonesia/STPI)

Aircraft Operator : Indonesian Civil Aviation Institute
(Sekolah Tinggi Penerbangan Indonesia/STPI)

Address : Budiarto Airport, Curug Tangerang
Republic of Indonesia

The operator was an approved Pilot School organization under CASR Part 141 and held Pilot School Certificate Number 141/001.

1.17.2 Budiarto Airport

The Budiarto airport was owner by Directorate General Civil Aviation and certificate number ADM.OC/034/2005.

1.18 ADDITIONAL INFORMATION

- The airport perimeter was fenced, and there were holes entered to the runway from village.
- None of airport security officer was guard on the airside.
- Before give second touch and go clearance, the ATC saw the motorcycles on airside and assumed it was move away, so that she did not pushed the crash-bell / serine.
- The Airport Standard Operation Procedure for Security Program published in the year 2006 was not containing at least the information referred to CASR 139 Appendix 1.

1.19 USEFUL OR EFFECTIVE INVESTIGATION TECHNIQUE

The investigation is being conducted in accordance with NTSC approved policies and procedures, and in accordance with the standards and recommended practices of Annex 13 to the Chicago Convention.

2 ANALYSIS

The aircraft performed touch and go training. During the second circuit, the aircraft bounced and went to the left. The aircraft hit a running motorcycle on the runway.

The ATC saw the motorcycles on the airside and assumed they would move away, that she did not push the cross-bell.

The motorcycle entered the runway through a broken fence

The area outside the airport is a village. The airport perimeter is fenced, but local people breach the fence to enter the runway from the village. The local people used the runway as a shortcut to the main road.

None of the airport security officers were guard on the airside. According to the standard operating procedure, they were guard on the ICAI and the airport main gate.

The Airport Standard Operation Procedure for Security Program published in the year 2006 was not containing at least the information referred to CASR 139 paragraph 139.087 (Access to Aerodrome) and Appendix 1 section 4 (Access to the aerodrome movement area).

Civil Aviation Safety Regulation (CASR) 139

Appendix 1 items to be included in an aerodrome manual, state:

The aerodrome manual for a certified aerodrome is to contain at least the information referred to for each section and subsection.

Section 4.2 access to the aerodrome movement area.

Particulars of the procedures that have been developed and are to be followed, in coordination with other responsible agencies, to control access and prevent unauthorized entry of persons, vehicles, equipment or animals, or other things that may endanger aircraft safety, onto the movement area, including details of the following:

- a. The roles and responsibilities of the aerodrome operator, aircraft operators, security organizations the DGCA and other government departments, as appropriate; and
- b. The names and roles of the persons who are responsible for controlling access to the movement area and the telephone numbers for contacting them during and after working hours.

The aircraft bounced and went to the left then hit a running motorcycle on the runway.

3 CONCLUSIONS

3.1 FINDINGS

- The aircraft was certified as being airworthy at the time of accident.
- The aircraft performed to touch and go training.
- The motorcycle entered to the grass of left shoulder.
- The aircraft hit the running motorcycle on the grass of left shoulder.
- The airport perimeter has fenced. The local people breach entered to the runway as a shortcut to the main road.
- According to the standard operating procedure, there were guards on the ICAI and the airport main gate. None of airport security officer was guard on the airside.
- None of Budiarto aerodrome manual contains at least the information referred to CASR 139 Appendix 1.
- The ATC did not pushed the crash-bell, at the time she saw the motorcycle on the runway.
- The ATC transcript recorder facility was unserviceable during the occurrence.

3.2 CAUSES

There was an unauthorized movement of motorcycles on the runway hit by the bouncing aircraft.

4 SAFETY ACTIONS

4.1 BUDIARTO AIRPORT

Base on Letter No. AU.50/503/250/IV/ BTO/10 date 21 April 2010 and Memo No. UM.10/254/IV/BTO/2010 dated 23 April 2010, Budiarto Airport Authority informed NTSC that they conducted safety actions as:

- Conducted security coordination between Airport security, STPI's security, local Police, local Army authority, local government, senior local people; and focused in the Airside area security.
- Equipped with fences around the airside area, and maintain secure during operation session.
- Complement the security surrounding runway facilities in the form of a secure boundary fence or to traffic around the runway.

5 SAFETY RECOMMENDATIONS

As a result of this accident investigation, the National Transportation Safety Committee made the following recommendation.

5.1 BUDIARTO AIRPORT AUTHORITY

The National Transportation Safety Committee recommends that the Budiarto Airport Authority should:

- Review The Airport Standard Operation Procedure for Security Program published in the year 2006, including procedures writing formatting in the functions and tasks section, particular for the management policy and security officers for the easily uses in the future as an operational guidance.
- Supervision improvement for the ATC (Air Traffic Controller) Officers during duty and revised Standard Operation Procedure for Flight Training session.
- Maintain the serviceability of the ATC transcript recorder facility.
- Review Standard Operation Procedure of Air Traffic Control related to the flight training operation.

6 APPENDIXES

Appendix A: Holes in the fence on the airport perimeter, two days after the accident



