



**KOMITE NASIONAL KESELAMATAN TRANSPORTASI
REPUBLIC OF INDONESIA**

PRELIMINARY

KNKT.16.11.40.04

Aircraft Serious Incident Investigation Report

PT. Nusa Flying International

Cessna 172P; PK-NIZ

Adi Soemarmo International Airport

Republic of Indonesia

16 November 2016



2016

This preliminary investigation report was produced by the Komite Nasional Keselamatan Transportasi (KNKT), Transportation Building, 3rd Floor, Jalan Medan Merdeka Timur No. 5 Jakarta 10110, Indonesia.

The report is based upon the initial investigation carried out by the KNKT 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).

The preliminary report consists of factual information collected until the preliminary report published. This report will not include analysis and conclusion.

Readers are advised that the KNKT investigates for the sole purpose of enhancing aviation safety. Consequently, the KNKT reports are confined to matters of safety significance and may be misleading if used for any other purpose.

As the KNKT believes that safety information is of greatest value if it is passed on for the use of others, readers are encouraged to copy or reprint for further distribution, acknowledging the KNKT as the source.

When the KNKT makes recommendations as a result of its investigations or research, safety is its primary consideration.

However, the KNKT fully recognizes that the implementation of recommendations arising from its investigations will in some cases incur a cost to the industry.

Readers should note that the information in KNKT reports and recommendations is provided to promote aviation safety. In no case is it intended to imply blame or liability.

TABLE OF CONTENTS

TABLE OF CONTENTS	i
TABLE OF FIGURES	ii
ABBREVIATIONS AND DEFINITIONS	iii
INTRODUCTION	iv
1 FACTUAL INFORMATION	5
1.1 History of the Flight.....	5
1.2 Personnel Information	6
1.3 Aircraft Information.....	6
1.3.1 General	6
1.3.2 Nose landing gear repair.....	6
1.4 Aerodrome Information	7
1.5 Wreckage and Impact Information	7
1.6 Organizational and Management Information.....	8
1.7 Additional Information	8
1.8 Useful or Effective Investigation Techniques	8
2 FINDINGS	9
3 SAFETY ACTION	10
4 SAFETY RECOMMENDATIONS	11
4.1 PT. Nusa Flying International.....	11

TABLE OF FIGURES

Figure 1: The archive photo of PK-NIZ aircraft	5
Figure 2: the nose wheel axle found on runway	7

ABBREVIATIONS AND DEFINITIONS

C of A	:	Certificate of Airworthiness
C of R	:	Certificate of Registration
CPL	:	Commercial Pilot License
km	:	Kilometer
KNKT	:	<i>Komite Nasional Keselamatan Transportasi</i>
PF	:	Pilot Flying
PSC	:	Pilot School Certificate
MLB	:	Maintenance Log Book
SM	:	Service Manual
SPL	:	Student Pilot License
UTC	:	Universal Time Coordinated

INTRODUCTION

SYNOPSIS

On 16 November 2016, a Cessna C172P aircraft registered PK-NIZ was being operated by Nusa Flying International to conduct touch and go flight training at Adi Sumarmo Airport (WAHQ), Solo.

At 0317 UTC, the aircraft took off from runway 26 and joined left downwind and held on downwind due to traffic. The first student pilot performed two touch and go exercises and afterward the second student pilot acted as pilot flying. The third and fourth touch and go exercises were uneventful.

The weather during this flight was reported clear, the wind condition was calm and the visibility was 6 to 7 km.

The pilot received clearance for the fifth touch and go and the aircraft touched down. After the nose wheel touched on runway, the pilot felt the aircraft vibrated and the instructor took over the control. The instructor assumed that the vibration was caused by flat tire. The instructor recovered and maintain the nose up attitude by increased engine power and slightly pulled the control column.

Thereafter, the pilot requested for full stop landing and instructed by tower controller to exit via taxiway C. The pilot also requested assistance from Adi Soemarmo tower controller to observe the nose wheel condition.

When approaching taxiway C, the pilot lowered the nose and stopped the aircraft. The pilots shut down the engine and commanded the student to evacuate. No one injured as a result of this occurrence and the aircraft had minor damage.

At the time of issuing this preliminary investigation report, the The Komite Nasional Keselamatan Transportasi (KNKT) had not been informed any safety actions resulting from this occurrence.

Based on the initial data collected, KNKT issued safety recommendation to the aircraft operator to address safety issue identified during the investigation.

1 FACTUAL INFORMATION

1.1 History of the Flight

On 16 November 2016, a Cessna C172P aircraft registered PK-NIZ was being operated by Nusa Flying International to conduct touch and go flight training at Adi Sumarmo Airport (WAHQ), Solo¹



Figure 1: The archive photo of PK-NIZ aircraft

Prior to flight, the student pilots and instructor conducted preflight check and there was no abnormality of the aircraft system found.

At 1006 LT (0306 UTC²), the pilot requested to start engine and at 0310 UTC the pilot requested to taxi to runway 26 via fillet (grass taxiway) number one. The first student pilot acted as pilot flying (PF) occupied left pilot seat, the instructor occupied right pilot seat and the second student pilot acted as observer on the back seat.

At 0317 UTC, the aircraft took off from runway 26 and joined left downwind and held on downwind due to traffic. The first student pilot performed two touch and go exercises and afterward the second student pilot acted as pilot flying. The third and fourth touch and go exercises were uneventful.

The weather during this flight was reported clear, the wind condition was calm and the visibility was 6 to 7 km.

At approximately 0508 UTC, the pilot received clearance for the fifth touch and go and was acknowledged by the pilot.

¹ Adi Soemarmo International Airport (WAHS), Solo will be named as Solo for the purpose.

² The 24-hours clock in Universal Time Coordinated (UTC) is used in this report to describe the local time as specific events occurred. Local time is UTC+7 hours

At approximately 0509 UTC, the aircraft touched down. After the nose wheel touched on runway, the pilot felt the aircraft vibrated and the instructor took over the control. The instructor assumed that the vibration was caused by flat tire. The instructor recovered and maintain the nose up attitude by increased engine power and slightly pulled the control column.

Thereafter, the pilot requested for full stop landing and instructed by tower controller to exit via taxiway C. The pilot also requested assistance from Adi Soemarmo tower controller to observe the nose wheel condition.

When the aircraft passing grass taxiway number 1, the pilot of another training aircraft that was holding on short noticed that the aircraft rolled at high nose attitude without nose wheel and attempted to inform the tower controller. The tower controller asked to the assistant to observed the aircraft condition with the telescope. The assistant noticed that the nose wheel had detached.

When approaching taxiway C, the pilot lowered the nose and stopped the aircraft. The pilots shut down the engine and commanded the student to evacuate. No one injured as a result of this occurrence and the aircraft had minor damage.

1.2 Personnel Information

The Flight Instructor was male Indonesia pilot, 47 years old and held valid medical certificate, Commercial Pilot License (CPL) and instrument rating. The total of flying experiences was 5,703 hours including 2,600 hours on type.

The first student pilot was male, 18 years old. The student started the training since 19 April 2016 and held valid Student Pilot Licence (SPL) and medical certificate. The total flying experience was 9 hours 30 minutes.

The second student pilot was male, 19 years old. The student starts training since 19 April 2016 and held valid Student Pilot Licence (SPL) and medical certificate. The total flying experience was 12 hours.

1.3 Aircraft Information

1.3.1 General

The aircraft registered PK-NIZ manufactured by Cessna Aircraft Company in United States of America in 1981 with the type/model was Cessna 172P and serial number 17275012. The aircraft had valid Certificate of Airworthiness (C of A) and Certificate of Registration (C of R) with total hour of 13,772 hours and 20 minutes.

The aircraft was not equipped with flight recorder, nor required by current Indonesia regulation for this type.

The aircraft engine manufactured by Textron Lycoming in United States of America. The type/model was O-320-D2J with serial number L-100000-39A. The engine installed on 3 May 2016 and total hour of the engine was 332 hours and 45 minutes since the last overhaul.

1.3.2 Nose landing gear repair

On 7 November 2016, an instructor was conducting cockpit introduction to some

students and found hydraulic leak on the aircraft nose landing gear and the strut flat. The instructor reported to the engineer of this condition. The nose landing gear was repaired on the next day.

The repair process included the removal and reinstallation of the nose wheel refers to Cessna 172 Series Service Manual (SM) chapter 5-38 and 5-45.

The investigation could not find any record of the repair in the Maintenance Log Book (MLB).

1.4 Aerodrome Information

Adi Soemarmo international airport was a civil enclave airport operates by PT. Angkasa Pura I which located in Central Java. The airport serves schedule commercial and training flight of civil and military flying school. The runway dimension was 2,600 meters length and 45 meters width and the surface was asphalt. The runway designation number was 08-26.

1.5 Wreckage and Impact Information

Metal scratch marks were found at touchdown area at approximately 8 meters length. The nose wheel axle through bolt was found on runway surface at approximately 500 meters from runway threshold and the nose wheel was found at runway shoulder at approximately 750 meters from runway threshold.

The metal scratch marks also found at approximately 2,100 meters from runway threshold near to taxiway C at approximately 15 meters length.

The nose wheel fork found scrap for about 5 centimeters and the propeller tip found bent forward for about 10 centimeters.



Figure 2: the nose wheel axle through bolt found on runway

1.6 Organizational and Management Information

The aircraft owned and operated by PT. Nusa Flying International which had a valid Pilot School Certificate (PSC) number 141/007.

The operator operated seven Cessna 172 aircraft and has just moved the training based from Budiarto Airport, Tangerang to Solo. The Nusa Flying International also has another training base in Ahmad Yani International Airport, Semarang.

Further information of the organization will be described in the final report.

1.7 Additional Information

The investigation is continuing. KNKT plans to complete the investigation within 12 months since the day of the occurrence. Should any further relevant safety issues emerge during the course of the investigation, KNKT will immediately bring the issues to the attention of the relevant parties and publish as required.

1.8 Useful or Effective Investigation Techniques

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

2 FINDINGS³

According to factual information during the investigation, the Komite Nasional Keselamatan Transportasi identified initial findings as follows:

- The pilots held valid licenses and medical certificates.
- The aircraft had valid Certificate of Airworthiness (C of A) and Certificate of Registration (C of R).
- The weather reported at the time of occurrence was clear, the wind was calm and the visibility was 6 to 7 kilometers.
- After the aircraft touched down the pilot felt the aircraft was vibrate.
- The flight instructor take over the control, then recover the aircraft and maintain the nose up attitude by increased engine power and slightly pulled the control column.
- Witnesses saw that the aircraft rolled without nose wheel at high attitude nose.
- When approaching taxiway C, the pilot lowered the nose and stopped the aircraft.
- No one injured as a result of this occurrence and the aircraft had minor damage.
- On 7 November 2016, hydraulic leak was found on the aircraft nose landing gear and the strut flat. The nose wheel was repaired on the next day, included the removal and reinstallation of the nose wheel. The investigation could not find any record of the repair in the Maintenance Log Book (MLB).
- Metal scratch marks were found which was at touchdown area at approximately 8 meters length. The metal scratch mark also found before taxiway C at approximately 15 meters length.
- The propeller tip found bent forward and the nose wheel fork found scrap for about 5 centimeters. The nose wheel axle was found on runway surface at approximately 500 meter from touchdown and the nose wheel was found at runway shoulder at approximately 750 meters from runway threshold.

³ Findings are statements of all significant conditions, events or circumstances in the accident sequence. The findings are significant steps in the accident sequence, but they are not always causal, or indicate deficiencies. Some findings point out the conditions that pre-existed the accident sequence, but they are usually essential to the understanding of the occurrence, usually in chronological order.

3 SAFETY ACTION

At the time of issuing this preliminary report, the Komite Nasional Keselamatan Transportasi had not been informed of any safety actions resulting from this occurrence.

4 SAFETY RECOMMENDATIONS

According to factual information and initial findings, the Komite Nasional Keselamatan Transportasi issued safety recommendations to address safety issues identified in this investigation.

4.1 PT. Nusa Flying International

- **04.O-2016-95.1**

To ensure the maintenance actions performed are recorded in the Maintenance Log Book.

KOMITE NASIONAL KESELAMATAN TRANSPORTASI REPUBLIK INDONESIA

Jl. Medan Merdeka Timur No.5 Jakarta 10110 INDONESIA

Phone : (021) 351 7606 / 384 7601 Fax : (021) 351 7606 Call Center : 0812 12 655 155

website 1 : <http://knkt.dephub.go.id/webknkt/> website 2 : <http://knkt.dephub.go.id/knkt/>

email : knkt@dephub.go.id