

THE REPUBLIC OF KENYA



**MINISTRY OF TRANSPORT, INFRASTRUCTURE, HOUSING,
URBAN DEVELOPMENT & PUBLIC WORKS**

STATE DEPARTMENT FOR TRANSPORT

AIRCRAFT INCIDENT INVESTIGATION DEPARTMENT

PRELIMINARY INVESTIGATION REPORT

**INCIDENT TO THE AIRCRAFT 5Y-NNS, CESSNA C-172N ON
16.02.2021 AT WILSON AIRPORT, NAIROBI COUNTY**

PRELIMINARY INCIDENT REPORT SUMMARY

OPERATOR	:	Ninety Nines Flying School
AIRCRAFT TYPE	:	Cessna 172
AIRCRAFT MANUFACTURER	:	Textron Aviation Inc
YEAR OF MANUFACTURE	:	1979
AIRCRAFT REGISTRATION	:	5Y-NNS
AIRCRAFT SERIAL NUMBER	:	172-71109
DATE OF REGISTRATION	:	01 August 2017
NUMBER AND TYPE OF ENGINE	:	One, Lycoming O-320-E2D
DATE OF OCCURRENCE	:	16 February 2021
LAST POINT OF DEPARTURE	:	Wilson Airport, Nairobi County (01° 19' 18.19"S, 036° 48' 53.40"E)
POINT OF INTENDED LANDING	:	Wilson Airport
TIME OF OCCURRENCE	:	0445 (0745)
LOCATION OF OCCURRENCE	:	Wilson Airport
TYPE OF FLIGHT	:	Training
PHASE OF FLIGHT	:	Landing
NUMBER OF PERSONS ON BOARD	:	One
INJURIES	:	Nil
NATURE OF DAMAGE	:	Minor
CLASS OF OCCURRENCE	:	Incident
PILOT IN COMMAND	:	SPL
PIC's FLYING EXPERIENCE	:	40 Hours

All times given in this report is Coordinated Universal Time (UTC), with East African Local Time in Parenthesis

OBJECTIVE

This preliminary report contains factual information that has been determined up to the time of publication. The information in this report is published to inform the aviation industry and the public of the general circumstances of the incident.

This investigation has been carried out in accordance with The Kenya Civil Aviation (Aircraft Incident and Incident Investigation) Regulations, 2018, and Annex 13 to the ICAO Convention on International Civil Aviation.

The sole objective of the investigation of an incident or incident under these Regulations shall be the prevention of incidents and incidents. It shall not be the purpose of such an investigation to apportion blame or liability.

The information contained in this report is derived from the data collected during the preliminary investigation of the Incident.

INVESTIGATION PROCESS

The occurrence involving a Cessna 172N passenger aircraft registration 5Y-NNS was notified to the Aircraft Accident Investigation Department (AAID), State Department for Transport (SDT) of the Ministry of Transport, Infrastructure, Housing, Urban development, and Public Works through a phone call by Wilson Control Tower.

Under the provisions of Annex 13 to the Convention on International Civil Aviation, Kenya civil aviation act, and regulations, an investigation into the circumstances leading to the incident was initiated immediately.

After the initial on-site investigation phase, the occurrence was classified as an ‘Incident’ owing to the nature of the occurrence.

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LIST OF ABBREVIATIONS/GLOSSARY OF TERMS

AAID	-	Aircraft Accident Investigation Department
AMSL	-	Above Mean Sea Level
FT	-	feet
ICAO	-	International Civil Aviation Organization
KCAA	-	Kenya Civil Aviation Authority
LH	-	Left Hand
LT	-	Local Time
RH	-	Right Hand
TBN	-	To Be Notified
VFR	-	Visual Flight Rules

SYNOPSIS

The report describes the events of an aircraft incident that occurred on 16 February 2021 at 0424 (0724) involving a Cessna 172N registration 5Y-NNS operated by Ninety-Nines Flying School. The incident was notified to AAID on the same day at (0440) 0740.

The aircraft under the command of a Student Pilot (Trainee) was carrying out Local flying (touch and go). This was the second solo flight of the day for the student pilot, the first solo flight was uneventful. The aircraft took off at (0415) 0715 from Wilson Airport and carried out the first touch and go exercise successfully. During the last full stop landing the aircraft touched down, on backtracking runway 14, it veered off the runway, and came to a halt 34m off the runway centerline leading to a 'Runway excursion incident' The incident took place at (0424) 0724. There was no pre or post-incident fire.

The probable cause of the incident was the incorrect technique of taxi by the student pilot, which caused the aircraft to veer off the runway.

1.0 FACTUAL INFORMATION

1.1 History of the Flight

On 16 February 2021, two touch and go flights were planned for the Student pilot on Cessna 172N aircraft registration 5Y-NNS. The crew composing of an instructor and student carried out the pre-flight and walk-around checks before the flight and no abnormalities were recorded or reported.

The first solo flight was uneventful. On satisfactory performance, the flight instructor released the student pilot for a second solo. Take-off clearance was obtained from Wilson ATC and the aircraft departed for the flight at 0415(0715). The first touch and go exercises were carried out on Runway 07. The first touch and go was uneventful. During the second landing, the aircraft touched down deep into runway 07 and traveled past the intersection of runway 07/14. Permission was granted to backtrack to runway 14. It was in the process of backtracking that the aircraft was reported to have veered off the runway at the intersection of runway 07/14. The student pilot immediately pulled out the fuel mixture, applied brakes, and the aircraft came to a halt about 20 meters off the runway. The student pilot informed the ATC, requested assistance, and followed shut down procedures. There were no injuries and the pilot disembarked from the aircraft unaided.

At the time of the incident, the weather was reported to be favorable for a VFR flight and the prevailing visibility was greater than 6 km.

1.2 Injuries to Persons

Table 1: Injury chart

Injuries	Crew	Passenger	Others
Fatal	0	0	0
Serious	0	0	0
Minor/None	1	0	

1.3 Damage to Aircraft



Figure 1: The aircraft in a grassy area within the confines of the Aerodrome

The aircraft sustained minor damage on the right main landing gear attachment point and the right-hand horizontal stabilizer.

1.4 Other Damage



Figure 2: The destroyed airport Signage within the Aerodrome

The runway signboard was dislodged from the stand.

1.5 Pilot's Information

The student pilot is a Kenyan male aged 21. At the time of the incident, he held SPL issued by Kenya Civil Aviation Authority.

Table 2: Summary of the pilot’s relevant information

D.o.B/Age	2 February 2000
Sex	Male
Nationality	Kenyan
Type of License	SPL
Issuing Authority	KCAA
Date of issue	9 March 2019
Validity of License	N/A
Ratings	Nil
Total Flying hours	40
Total hours on type	40
Total last 90 days (hours)	TBN
Total last 30 days (hours)	22.9
Total last 7 days (hours)	7.0
Total last 24 Hours (hours)	1.7
Medical Certificate (Class/Validity)	Class 2 with no restrictions/limitations?, 15 October 2021

1.6 Aircraft Information

1.6.1 General information

The aircraft, a Cessna 172N serial number 172-71109, was manufactured in 1979 by Textron Aviation Inc. and entered the Kenyan register on 1 August 2019. It is a high-wing monoplane of all-metal, semi-monocoque construction. It is equipped with a fixed tricycle landing gear. The steerable nose gear is equipped with an air/hydraulic fluid shock strut.

The aircraft has four-place seating, and a double, fold-up auxiliary rear seat. It is powered by four-cylinder, horizontally opposed air-cooled” Blue streak” (Lycoming) engines. The engine drives a fixed-pitch propeller.

It has rear side windows, a “wrap-around” rear window, and a swept-back fin and rudder.

A maintenance history review of the aircraft's documentation showed it had a valid certificate of release to service with no defects.

1.6.2 5Y-NN



Figure 3: 5Y- NNS Aircraft before the incident

Table 1: Aircraft data at the time of the incident

Aircraft data at the time of the Incident	
Manufacturer:	Textron Aviation Inc.
Model:	Cessna 172N
MSN:	172-71109
Year of manufacture:	1978 please confirm Y.O.M. between 1978 and 1979
Total hours since new	10,505.0
Nationality and registration mark:	Kenyan, 5Y-NNS
Certificate of airworthiness	
Number:	S/No 0230
Initial Issue date:	12 October 2018
Renewal date	16 October 2020
Valid until:	4 October 2021
Certificate of registration	
Number:	S/No 2533-A
Issue date:	1 August 2017
Engine	Lycoming O-360-E2D
Engine Serial Number	RL-39594-27A
Total time since new	5,099.1 hours
Last major inspection and date:	22 December 2020
Total hours since the last inspection:	1,105 hours
Total hours since the last COA:	107.7 hours
Maximum take-off Weight	1,043 Kgs (2,300lbs)
Maximum Landing Weight	1,043 Kgs (2,300lbs)
Maximum Operating Altitude	14,000ft
Propeller Type	McCauley 1C160DTM7557
No. of Blades	2
Constructor	McCAULEY
Constructor's No.	734046

The Aircraft technical records indicated that the aircraft had undergone Check 1 inspection on 22 December 2020 per Approved Maintenance Program Ref: 99s/TECH/MS/172/01-ISSUE 2-Rev-0, Work order 2020084 and there had not been any significant airworthiness issues. The total aircraft hours recorded during that maintenance was 10505.0 since new.

1.6.3 Fuel

The fuel used was AVGAS 100/100LL.

1.7 Meteorological Information

Recorded meteorological information at Wilson Airport indicated the temperature at 0430 (0730) Winds 60° at 14 knots and there was no recorded rain for the period; Visibility was greater than 6km; Clouds ceiling few at 1900ft above the ground level (AGL); Temperature was 17°C; Dew point 14°C; QNH 1018mb.

1.8 Aids to Navigation

The flight was conducted in the daytime under VFR.

1.9 Communication

The aircraft was fitted with VHF radio communication equipment.

1.10 Aerodrome information

HKNW is located at latitude 01° 19' 18.19" S and longitude 036° 48' 53.40" E at an elevation of 5,546 feet AMSL. The airport is a medium-sized airport situated about 5km south of Nairobi Central Business District. It serves both domestic and international traffic and has two asphalt runways:

- RWY 07/25 measures 4,800 feet (1,463m) long by 79 ft (24m) wide;
- RWY 14/32 measures 5,118 feet (1,560m) long by 75 ft (22m) wide.

The airport has eight taxiways namely A, B, C, E, H, J, K, L, and M.

It is also used for training flights. The aerodrome has a manned ATC, with Wilson tower providing control services relevant information

1.11 Flight Recorders

The aircraft was not fitted with flight recorders and it was not a requirement by the KCAA regulations.

1.12 Wreckage and Impact Information

The aircraft came to a final stop about 20 meters from the runway.

The right-hand wing came into contact with the ground.

1.12.1 Salvage operations

To remove the aircraft from the location, the right-wing was lifted manually and thereafter the right main landing gear strut was forced down to support the fuselage. The aircraft was then pushed to the hangar.



Figure 4: The front section of the aircraft after the final stop



Figure 5: The section of the bent spring steel strut after the incident



Figure 6: Final resting point from the center of the runway



Figure 7: The cockpit after the Incident

1.12.2 Emergency locator transmitter

The aircraft is equipped with an ELT.

1.13 Medical and Pathological Information

There was no evidence that physiological factors or incapacitation affected the performance of the pilot.

1.14 Fire

There was no pre or post-crash fire

1.15 Survival Aspects

The incident was survivable. The pilot did not suffer any injuries.

1.16 Tests and Research

N/A

1.17 Organizational and Management Information

Aircraft Owner : NINETY NINES FLYING SCHOOL
Address : WILSON AIRPORT, NAIROBI
Aircraft Operator : NINETY NINES FLYING SCHOOL
Address : P.O Box 46968-00100 Nairobi
Kenya

1.18 Additional information

Not applicable

1.19 Useful or Effective investigation techniques

Not applicable

2.0 Summary

There was no safety recommendation determined during the investigation.

Investigator-In-Charge

01/03/2021