



# AIRCRAFT INCIDENT REPORT

NCAT /2012/10/04/F

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**Accident Investigation Bureau**

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**Final Report on the Serious Incident involving a  
Nigerian College of Aviation Technology (NCAT)  
Aircraft Tampico Club TB9 with Registration Number  
5N-CBE which occurred at Zaria Aerodrome, Kaduna  
State, Nigeria on 4<sup>th</sup> October 2012**

This report was produced by the Accident Investigation Bureau (AIB), Murtala Muhammed Airport, Ikeja, Lagos.

The report is based upon the investigation carried out by Accident Investigation Bureau, in accordance with Annex 13 to the Convention on International Civil Aviation, Nigerian Civil Aviation Act 2006, and Civil Aviation (Investigation of Air Accidents and Incidents) Regulations.

In accordance with Annex 13 to the Convention on International Civil Aviation, it is not the purpose of aircraft accident/serious incident investigations to apportion blame or liability.

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

Recommendations in this report are addressed to the Regulatory Authority of the State (NCAA). It is for this authority to ensure enforcement.

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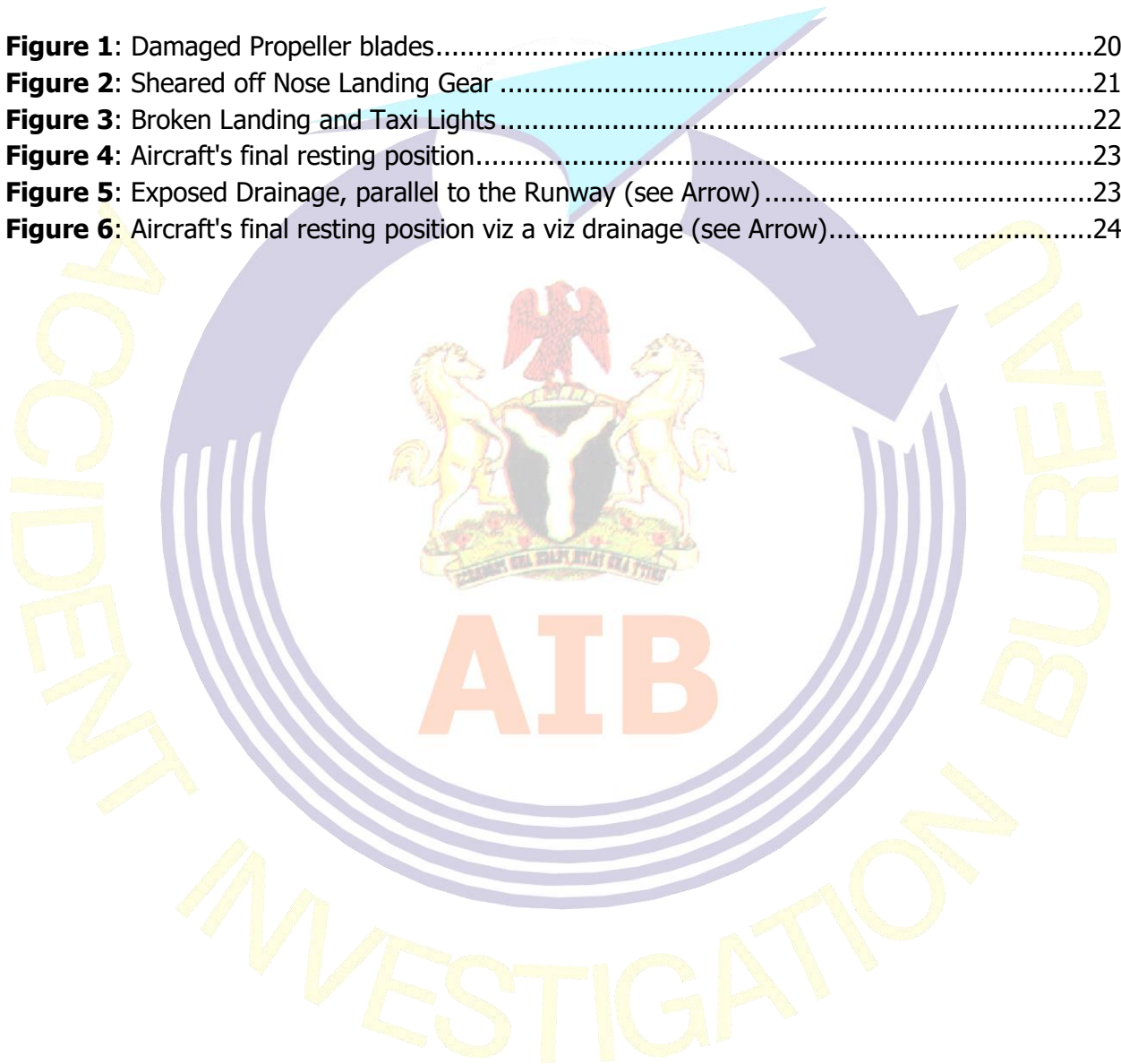
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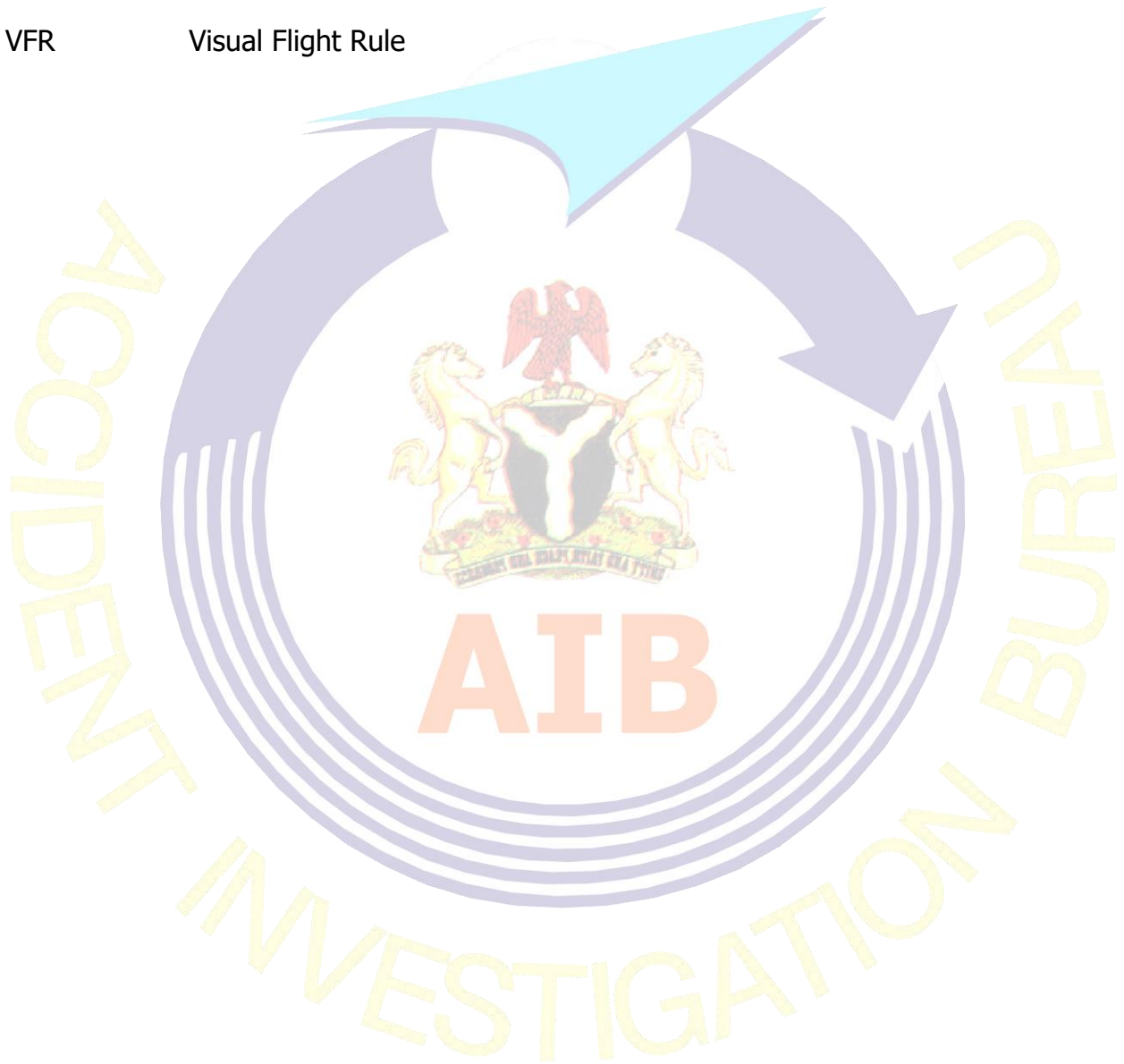
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## GLOSSARY OF ABBREVIATIONS USED IN THIS REPORT

AIB	Accident Investigation Bureau
AMO	Approved Maintenance Organization
AME	Aircraft Maintenance Engineer
ATPL	Air transport Pilot License
ATO	Approved Training Organization
ATC	Air Traffic controller
AOC	Air Operator Certificate
AFI	Approved Flight Instructor
CCTV	Close Circuit Television
CFI	Certified Flying Instructor
CVR	Cockpit Voice Recorder
C of R	Certificate of Registration
FAAN	Federal Airport Authority of Nigeria
FI	Flying Instructor
FSPM	Flying School Procedure Manual
NCAT	Nigerian Collage of Aviation Technology
NCAA	Nigerian Civil Aviation Authority
NIMET	Nigerian Meteorological Agency
Nig. CARs	Nigerian Civil Aviation Regulation
NAMA	Nigerian Airspace Management Agency
NDB	Non Directional Beacon
QNH	Query Navigation Height

SOP	Standard Operating Procedure
SO	Safety Officer
SP	Student Pilot
UTC	Universal Time Coordinated
VFR	Visual Flight Rule



**Aircraft Accident Report No.: NCAT/2012/10/04/F**

Registered Owner: Nigerian College of Aviation Technology  
(NCAT)

Operator: NCAT

Aircraft Type and Model: Tampico Club TB 9

Manufacturer: DAHER SOCATA, France

Date of Manufacture: 1998

Registration: 5N – CBE

Serial No.: 1849

Place of the Accident: Zaria Aerodrome, Kaduna State

Date and Time of the Accident: 4<sup>th</sup> October, 2012 at 1201 Local Time

*All times in this report is local time (Equivalent to UTC+1) unless otherwise stated.*

## SYNOPSIS

On 4<sup>th</sup> of October 2012, Accident Investigation Bureau (AIB) was notified by the Nigerian College of Aviation Technology (NCAT) Zaria, of the serious incident involving a Tampico Club TB 9 aircraft, with registration 5N-CBE belonging to NCAT, which occurred at Zaria Aerodrome. A team of investigators were dispatched to assess the aircraft and the incident site on 5<sup>th</sup> October 2012.

At 1201hrs, the student pilot (SP) took off from runway 24 and carried out four “touch and go” landings as part of a “Consolidated Solo Circuit and Landing” exercise. On the fifth circuit, the SP notified Tower of the intention to make a “full stop” landing. On this approach the SP came in with excess speed, the aircraft ballooned and a go around was executed.

On the sixth circuit, the SP reported having problems managing power and flare manoeuvre. Thereafter, the Flight Instructor (FI) contacted the aircraft from the Tower and talked down the SP all the way to landing.

The SP reported that during landing, the aircraft was flared before closing the power and it ballooned. The SP lost control of the aircraft, and it veered off to the right of the runway and stopped in a drainage that runs parallel to the Runway.

The SP came out of the aircraft without injury and was taken to the College clinic, examined and certified fit. There was no fire but the aircraft was substantially damaged.

### **Causal Factor**

The decision to release the SP for the flight with observed uncorrected limitations.

### **Contributory Factors**

- i. The SP’s inability to maintain appropriate final approach airspeed.
- ii. The loss of directional control of the aircraft after power was added on touchdown.

**Four safety recommendations were made.**

## 1.0 FACTUAL INFORMATION

### 1.1 History of the Flight

On 4<sup>th</sup> October 2012, a Tampico Club TB 9 aircraft, with registration 5N-CBE belonging to the Nigerian College of Aviation Technology (NCAT) was engaged in local training at Zaria Aerodrome. At 1201hrs the student pilot (SP) took off from runway 24 and carried out four touch and go landings as part of a "Consolidated Solo Circuit and Landing" exercise. On the fifth circuit, the SP notified Tower of the intention to make a full stop landing. On this approach the SP came in with excess speed, the aircraft ballooned and a go around was executed.

On the sixth circuit the flight instructor (FI), who was in the Tower observing the flight, contacted the aircraft to ascertain the situation; the SP reported having problems managing power and flare manoeuvre. Thereafter, the FI reassured and talked down the SP all the way to landing.

The SP reported that during landing, the aircraft was flared before closing the power and it ballooned. After closing the power, the SP felt the aircraft was high, then inadvertently increased power again. The SP lost control of the aircraft, and it veered off to the right of the Runway and stopped in a drainage that runs parallel to the runway.

The Tower immediately activated Emergency Siren and informed Fire Service. The SP came out of the aircraft without injury. The incident occurred at 1301hrs in daylight. There was no fire but the aircraft was substantially damaged. The SP was taken to the College clinic, examined and certified fit.

## 1.2 Injuries to Persons

INJURIES	CREW	PASSENGERS	OTHERS
Fatal	Nil	Nil	Nil
Serious	Nil	Nil	Nil
Minor	Nil	Nil	N/A
None	1	Nil	N/A
TOTAL	1	Nil	N/A

## 1.3 Damage to Aircraft

The aircraft was substantially damaged.

## 1.4 Other Damage:

Nil

## 1.5 Personnel Information

### 1.5.1 Student Pilot (SP)

Nationality: Nigerian  
Gender: Male  
Age: 21  
Licence No: 6057

License Validity: 1<sup>st</sup> August 2017  
Ratings: Nil  
Medical Validity: 17<sup>th</sup> July 2014  
Hours on Type: 24Hrs, 5Min  
Last 90 days: 24Hrs, 5Min

Last 28 days: 16Hrs, 30Min  
Last 7 days: 05Hrs, 25Min  
Last 24 hours: Nil

### 1.5.2 Flight Instructor

Nationality: Nigerian  
Age: 40 years  
Gender: Male  
Licence No: ATPL 4132  
Licence Validity: 04<sup>th</sup> October 2015  
Medical Validity: 21<sup>st</sup> January 2013  
Ratings: C-172, TB-9, TB-20, PA-23, B-58  
Total Flight Time: 3298Hrs  
Hours on type: 1,700Hrs  
Last 90 days: 157: 30 Hrs  
Last 28 days: 53: 55 Hrs  
Last 7 days: 01: 40 Hrs  
Last 24 hours: Nil

## 1.6 Aircraft Information

### 1.6.1 General Information

Registration Number:	5N-CBE
Manufacturer:	DAHER SOCATA, France
Model:	Tampico Club TB 9
Serial No.:	1849
Date of Manufacture:	1998
Registered Owner:	NCAT
Operator:	NCAT
Certificate of Airworthiness:	23 <sup>rd</sup> October 2012
Total Hours Since New:	2971.28Hrs
Total landings :	7377
Total Hours since last inspection:	10hrs

### 1.6.2 Power Plant

Manufacturer:	Textron Lycoming, USA
Engine Type:	Lycoming O-320-D2A
Year of Manufacture:	1998
Serial No.:	L-18763-39A
Total time since New:	1331.06hrs
Total time since overhaul:	251.58hrs

### 1.6.3 Propeller

Manufacturer:	SENSENICH
Model Number:	74.DM6.S8.054
Number of Blades:	2
Propeller type:	Fixed Pitch

### 1.7 Meteorological Information

The following weather conditions prevailed on the day of the occurrence:

#### At 1100 UTC

Wind:	280/12KT
Visibility:	20km
Weather:	Nil
Cloud:	Few 540m
Temp/Dew:	30°C/ 22°C
QNH:	1014hPa

#### At 1200 UTC

Wind:	260/10Kt
Visibility:	20km
Weather:	Nil
Cloud:	SCT 420m
Temp/Dew:	31°C/21°C
QNH:	1013hPa.

## 1.8 Aids to Navigation

There was serviceable Non Directional Beacon (NDB) available at Zaria Aerodrome in addition to Windsock and Aerodrome beacon at the time of the occurrence.

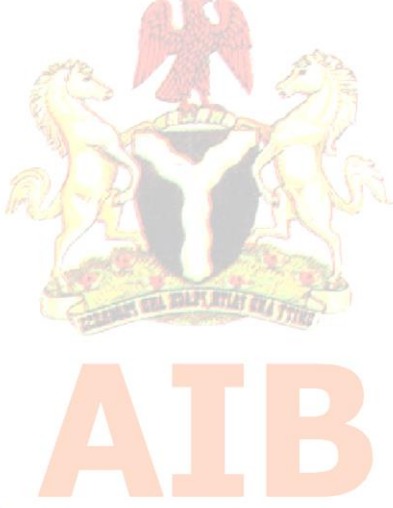
## 1.9 Communication

There was good communication between the tower and the aircraft during the training flight.

### Extracts from ATC transcript.

Time	Station	Communication
53:04	CONTROLLER	OK I HAVE YOUR INSTRUCTOR HERE. AAH STANDBY FOR HIM
53:10	INSTRUCTOR	BE ZARIA
53:12	PILOT	BE
53:14	INSTRUCTOR	MATS WHAT' UP NOW, WHATS HAPPENING?
53:14	PILOT	I DON'T REALLY I PUT MY POWER ON SIR WILL TURN LEFT DOWN WIND
53:24	INSTRUCTOR	COMFIRM YOU CAN MAKE A FULL STOP?

53:24	PILOT	I CAN MAKE IT
53:28	INSTRUCTOR	RELAX, HOLD UP YOUR NOSE AND WHEN FLARE CLOSE THE THROTTLE JUST HOLD UP
53:28	PILOT	OK I WILL
53:36	INSTRUCTOR	RELAX MATHEW REPORT FINALS RUNWAY 24
53:42	PILOT	WILL CALL YOU
55:28	INSTRUCTOR	AAH MATS WHAT'S UP BE HOW DO YOU READ?
55:41	PILOT	AM LEFT DOWN WIND 24 5-BE LEFT DOWN WIND 24
55:42	INSTRUCTOR	HOW YOU DOING HOW YOU DOING UP THERE?
55:44	PILOT	AM GOOD
55:49	INSTRUCTOR	OK WHAT'S GOOD NOW?JUST TURN FINALS
55:46	PILOT	OK I WILL
56:12	INSTRUCTOR	AHH BE HOW DO YOU READ?
56:12	PILOT	SIR

56:17	INSTRUCTOR	OK WHAT DO YOU THINK WAS WRONG? WHAT DO YOU THINK WAS WRONG?
56:25	PILOT	THE POWER ONE AND THE MY FLARE HEIGHT AM NOT REALY GETTING IT, THAT JUST THE PROBLEM
56:23	INSTRUCTOR 	OK OK JUST TRY AND CORRECT THAT NOW, I WANT YOU TO COME. YOU KNOW ITS QUITE SHORT SO YOU DONT NEED TOO MUCH POWER SO I WANT YOU TO TAKE YOUR TIME AND COME CLOSER TO THE GLIDE AND JUST KEEP IT COOL AND KEEP YOUR NOSE UP
58:02	CONTROLLER	5-BE ZARIA TOWER I HAVE ON FINAL.COMFIRM?
58:08	PILOT	FULL STOP LANDING

58:16	CONTROLLER	ROGER CLEARED TO LAND 210/05KT'S 24
58:20	PILOT	CLEARED TO LAND 5-BE
58:29	INSTRUCTOR	5-BE WE ARE DOING THIS TOGETHER OK. SO JUST TAKE YOUR TIME AND LISTEN TO ME AND CLEARANCE
58:52	INSTRUCTOR	BE YOU ARE COMING SLIGHTLY LOW YOU SLIGHTLY LOW JUST TRY AND COME UP A LITTLE BIT. AND MAINTAIN YOUR 70KTS JUST MAINTAIN SPEED JUST MAINTAIN SPEED JUST MAKE SURE YOU ARE MAINTAINING YOUR SPEED 70KTS AND YOU DOING NICELY YOU ARE DOING NICELY AND JUST CONTINUE DOWN NICE ANDS EASY, NICE AND EASY. OK YOU ARE OK NOW JUST CLOSE THE THROTTLE AND KEEP THE

		NOSE UP. NO DON'T GO BACK. GO GO HOLD UP  HOLD UP  HOLD UP  EASY  EASY EASY  BE

### 1.10 Aerodrome Information

Aerodrome Code:	DNZA
Airport Name:	Zaria Aerodrome
Airport Address:	Sokoto Road, Zaria
Airport Class:	III
Airport Authority:	FAAN
Airport Service:	AFIS
Type of traffic Permitted:	VFR
Coordinates:	N 11°07.81', E 007° 41.14'
Runway:	06 and 24
Elevation:	2177 ft.
Runway Length:	1646m
Runway Width:	46m
Meteorological Service:	Hourly observation
Markings:	Simple Runway markings and lighting system

## 1.11 Flight Recorders

The aircraft was not fitted with a flight data recorder neither was it required by regulation.

## 1.12 Wreckage and Impact Information

The aircraft veered off to the right of the runway to a grassy area and stopped in a drainage that runs parallel to the runway.

- i Both propeller blades were damaged
- ii Nose landing gear sheared off from its attachment points
- iii Landing and taxi lights on the Left wing were broken
- vi Cockpit floor panels and rudder pedals were damaged



**Figure 1: Damaged Propeller blades**



***Figure 2: Sheared off Nose Landing Gear***



**Figure 3: Broken Landing and Taxi Lights**

The aircraft touched down on Runway 24, bounced and veered off to the right of the runway and was stopped by the drainage that runs parallel to the runway. The nose landing gear sheared off from its attachment point due to high impact. Both propeller blades were damaged, landing and taxi lights were broken, cockpit floor panel and the rudder pedals were also damaged.

5N-CBE



**Figure 4: Aircraft's final resting position**



**Figure 5: Exposed Drainage, parallel to the Runway (see Arrow)**



**Figure 6: Aircraft's final resting position viz a viz drainage (see Arrow)**

### **1.13 Medical and Pathological Information**

The SP disembarked the aircraft unhurt, was taken to the NCAT clinic, examined and certified fit.

### **1.14 Fire**

There was no evidence of fire in flight or after the impact.

### **1.15 Survival Aspects**

The tower immediately activated Emergency Siren, and, informed Fire Service. The crash was survivable because there was a liveable volume of space in the cockpit.

### **1.16 Test and Research**

N/A

### **1.17 Organizational and Management Information**

NCAT is an Approved Training Organization (ATO) located at Zaria, Kaduna State. The approval is in accordance with the requirements of the Nigerian Civil Aviation Regulations (Nig.CARs) 2009 part 3. NCAT has four Certified Flying Instructors (CFIs) and 19 Approved Flying Instructors (AFIs) making a total of 23 FIs, among whom are two Simulator Instructors. The College has a total of 23 Aircraft including 14 TB 9, 5 TB 20, 3 Baron B58 and 1 TBM 850.

NCAT has in-house maintenance setup which is approved in accordance with the requirements of Nig.CARs 2009 part 6.

## **1.18.0 Additional Information**

### **1.18.1 Power Management during Approach**

A pilot's inability to assess or to manage the aircraft's power condition during approach is often cited as a cause of un-stabilized approaches. Either a deficit of power (low and/or slow) or an excess of power (high/fast) may result in an approach-and-landing incident or accident involving one of the following:

- Loss of control;
- Landing before reaching the runway (undershoot on landing);
- Hard landing;
- Tail strike; or,
- Runway overrun/ excursion.

### **1.18.2 Landing Flare**

The Landing Flare, in a fixed wing aircraft, is the transition phase between the final approach and the touchdown on the landing surface. This sub-phase of flight normally involves a simultaneous increase in aircraft pitch attitude and a reduction in engine power/thrust, the combination of which results in a decrease in both rate of descent and airspeed.

If executed correctly, the flare will result in the aircraft achieving the appropriate landing attitude with power at or near idle, a reduced rate of descent and a decaying airspeed, all at a height varying from several inches to several feet above the landing surface (dependent upon aircraft type). If not executed correctly, the flare could result in a hard landing, the collapse of the landing gear, a tail strike or in a runway overrun or excursion.

The flare process requires that the pilot adjusts the aircraft attitude and power settings from those maintained during final approach to values which are appropriate for landing. To be successful, these adjustments must occur at a height above the landing surface that will vary based on the size, weight and performance criteria of the aircraft and the prevailing environmental conditions. In many aircraft, pilots are required to make all height assessments based solely on external visual clues.

### 1.18.3 Aircraft Ballooning

**a) Ballooning during Round out:** If a pilot misjudges the rate of sink during a landing and thinks the airplane is descending faster than it should, there is a tendency to increase the pitch attitude and angle of attack too rapidly. This not only stops the descent, but starts the airplane climbing. This climbing during round out is known as ballooning.

**b) Ballooning after Touchdown:** When an aircraft impacts ground due to improper attitude, or excessive rate of sink, it tends to "bounce" back into the air. Although the aircraft's tires and shock struts provide some springing action, the airplane rebounds into the air because the wing's angle of attack was abruptly increased, producing a sudden additional lift.

The corrective action for a bounce is the same as for ballooning and similarly depends on severity. When it is very slight and there is no extreme change in the aircraft's pitch attitude, a follow-up landing may be executed by applying sufficient power to cushion the subsequent touchdown, and smoothly adjusting the pitch to the proper touchdown attitude.

**c) Go- Around:** A go-around is [based on the]pilot's judgment when he feels he is not completely satisfied with any aspect of the landing stages or procedures. On approach, if a pilot feels the approach is high, low, fast or slow delay in taking decision on next action can result in an incident/accident due to approach problems.

## 1.18.4 Stabilized Approach

Extracts from FAA Aviation Safety Manual

*"Focusing on establishing and maintaining a stabilized approach and landing is a great way to avoid experiencing a loss of control. A stabilized approach is one in which the pilot established and maintains a constant angle glide path towards a predetermined point on the landing runway. It is based on the pilot's judgment of certain visual cues and depends on the maintenance of a constant final decent airspeed and configuration".*

### Factors of Stabilized Approach

- Maintain a specified decent rate.
- Maintain a specified airspeed
- Complete all briefing and checklist
- Configure aircraft for landing (gear, flaps etc)
- Be stabilized by 500 feet for Visual Meteorological Condition (VMC) approach
- Ensure only small changes in heading/pitch are necessary to maintain the correct flight path

### GO-Around for safety

*If these factors are not met, the approach becomes "Unstabilized" which means a go-around for another attempt at landing.*

*If you choose to continue with an unstabilized approach, you risk landing too high, too fast, out of alignment with the runway centerline, or otherwise being unprepared for landing. These situations can result in loss of control of your aircraft.*

### Are stabilized approaches always safer?

*Yes, if you incorporate the checklist and are prepared for a safe landing. It's a good idea to execute a go-around if your checklists are not complete. Your safety depends on your ability to focus on safe touchdown.*

### **Tips for a stabilized approach**

*-pay attention to the wind in traffic pattern of operations, especially on the base to final turn*

*-Adjust your stabilized approach guidelines to your type of aircraft base on the manufacturer's guidance.*

*-Aircraft should be configured for landing at some predetermined distance from the airport or altitude, after which only small corrections to pitch, heading and power setting should be made.*

*-If not stabilized, go-around.*

### **1.18.5 Landing Checks**

The following are some of the procedures for the normal conduct of the operations of the SOCATA TB-9 aircraft from the flight manual:

#### ***Approach – Landing***

*FINAL:*

*Airspeed: 76 KIAS*

*Flaps: TAKE-OFF*

*Fuel pump: ON*

*Mixture: FULL RICH*

*Carburettor heating: ON or OFF as required*

*Brakes:* *Checked*

*Seats, seat belts,*

*Shoulder harnesses:* *ADJUSTED and SECURE*

*Landing lights:* *ON*

*SHORT FINAL:*

*FLAPS* *LANDING*

#### **1.18.6 CCTV**

A close circuit television (CCTV) is a self-contained surveillance system comprising camera, recorders and displays for monitoring activities. In a CCTV system the signals are not publicly distributed but are monitored, primarily for surveillance and security purposes.

#### **1.19 Useful and Effective Techniques:**

N/A

## 2.0 ANALYSIS

### 2.1 The Flight Stabilized and Unstabilized Approaches

A stabilized approach is one in which the pilot establishes and maintains a constant-angle glide path towards a predetermined point on the landing runway. It is based on the pilot's judgement of certain visual cues, and depends on the maintenance of a constant final descent airspeed and configuration, while an unstabilized approach is an approach during which an aircraft does not maintain stability in at least one of the following variables: airspeed, descent rate, vertical/lateral flight path and in landing configuration, or receive a landing clearance by a certain altitude.

For this type of aircraft to be on a stabilized approach, after extending flaps for landing, the SP should have maintained runway centre line, correct attitude, and airspeed of 76KIAS. Rate of descent should have been maintained with regards to power adjustment up to the point of rounding-out and flaring.

The SP reported that during the fifth approach, a go-around was initiated after coming with excess speed and ballooning severally during the round-out. This was because of the SP's inability to manage the aircraft power.

The training record available indicates that the SP had prior issues in managing power effectively while on approach.

## 2.2 Monitoring by Flight Instructor (FI)

After the unsuccessful fifth approach, the SP decided to go-around and at that point the FI established contact with the aircraft from the Tower and requested a situation report from the SP. The SP reported that he had a power management problem. The FI reassured and talked the SP all the way down to landing.

The Consolidated Solo Flight and the presence of a Flight Instructor to monitor the flight are not contained in the NCAT Flying School Procedure Manual (FSPM).

Furthermore, the investigation observed that there is a need for a definitive role for Flight Instructors, with a defined Procedure for assisting Student Pilots in the event of an emergency.

## 2.3 Final Approach and Landing

During the sixth approach, the FI talked down the SP to maintain power and glide approach. The SP reported being on a stabilized approach after being cleared to land on runway 24 and wind reported to be 210/05kts.

The SP flared the aircraft while on power, despite being instructed by the FI to close power. As a result, the aircraft ballooned. Then the SP removed power but realized that the aircraft was high and sinking then inadvertently added power. This resulted in the SP losing control of the aircraft and the aircraft veered off to the right of the runway.

## 2.4 Power Management

The SP's Flying Progress Record Book indicated that the SP has been unable to properly manage power on approaches to land. This deficiency was not adequately addressed before he was cleared for the Consolidated Solo Flight.

## 3.0 CONCLUSION

### 3.1 Findings

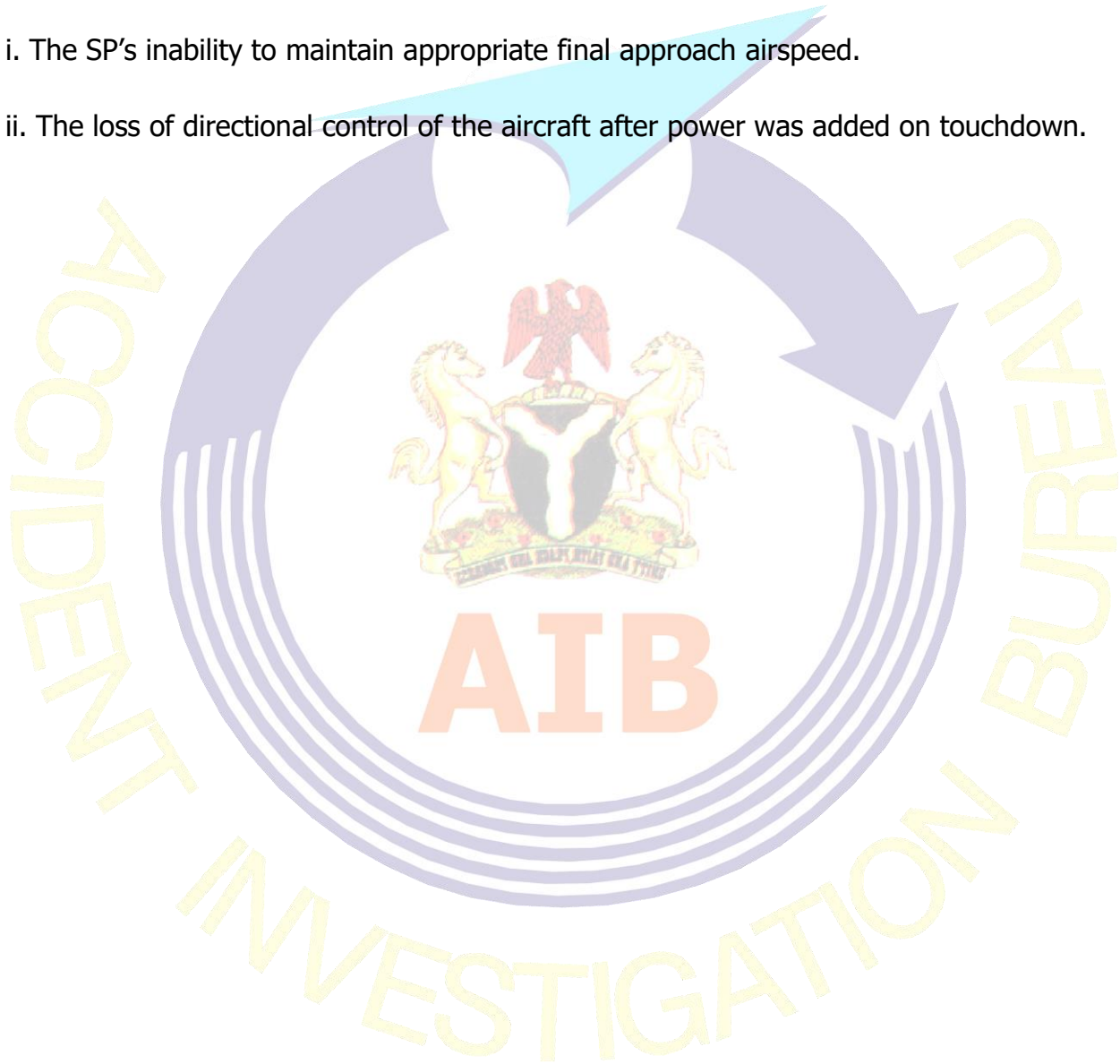
1. The Aircraft had valid C of A.
2. The SP had valid License and Medical.
3. The incident occurred during the SP's Consolidated Solo Flight exercise.
4. The SP had carried out four circuits and landings before the incident.
5. The SP carried out a go around due to unstabilized approach.
6. The FI contacted the aircraft from the Tower on the sixth circuit.
7. The SP reported to the FI that he was having a problem with managing power and flare manoeuvre.
8. The FI reassured and talked down the SP all the way to landing.
9. The SP lost control of the aircraft after touchdown, veered off to the right of runway 24, and came to a stop by a drainage that runs parallel to the runway.
10. The Consolidated Solo Flight and the presence of a Flight Instructor to monitor the flight are not contained in the NCAT Flying School Procedure Manual (FSPM).
11. There was no evidence to determine the maximum number of circuit landings for SPs in each of the consolidated flight training exercises and the time for each. Too many pattern works can reduce SP's energy level which can lead to regression in performance.

### 3.2 Causal Factor

The decision to release the SP for the flight with observed uncorrected limitations.

### 3.3 Contributory Factors

- i. The SP's inability to maintain appropriate final approach airspeed.
- ii. The loss of directional control of the aircraft after power was added on touchdown.



## 4.0 SAFETY RECOMMENDATIONS

### 4.1 Safety Recommendation 2017-032

NCAT should incorporate Solo Consolidation training procedures in the Flying School Procedure Manual (FSPM)

### 4.2 Safety Recommendation 2017-033

NCAT should ensure that recorded deficiencies of student pilots are properly addressed before being cleared for solo flight.

### 4.3 Safety Recommendation 2017-034

NCAT should install CCTV cameras at the airside to monitor for the reviewing of flight operations.

### 4.4 Safety Recommendation 2017-035

NCAA should ensure that NCAT fully complies with the training requirements of student pilots with peculiar challenges in accordance with the relevant sections of Nig.CARs 2009.

## RESPONSES TO SAFETY RECOMMENDATIONS

### NCAT Response on AIB Safety Recommendations

NCAT responded to Safety Recommendation 4.1 (2017-032) as follows:

"The College will amend the Flying School Procedures Manual (FSPM), Section 1.5.6 to incorporate Solo consolidation training procedures."

NCAT responded to Safety Recommendation 4.2 (2017-033) as follows:

"The College will ensure that the recorded deficiencies of student pilots are properly addressed before He/She is cleared for solo. The Flying School has issued [a] memo to all Flying Instructors to this effect"

NCAT responded to Safety Recommendation 4.3 (2017-034) as follows:

"The College will consider installation of CCTV Camera[s] at the airside for monitoring and review of flight operations."

### NCAA Response on AIB Safety Recommendations

NCAA responded to Safety Recommendation 4.4 (2017-035) as follows:

1. "The Nigerian Civil Aviation Authority (NCAA) does not agree with this recommendation. The Nig.CARs Part 2 details the Skill and Knowledge requirements for the Private Pilot License (PPL) and the Commercial Pilot License (CPL). It is therefore required that all student pilots must satisfactorily comply with these requirements and the approved procedures of the Approved Training Organisation (ATO)";

2. "The Authority wishes to bring to the attention of the Bureau that the Nig.CARs 2015 is the current Regulation and has been effective since the 1<sup>st</sup> of July, 2016. The Authority therefore suggests that the Bureau considers amending the draft report to reflect the current Regulation".

## **SAFETY ACTION**

The Nigerian Civil Aviation Regulations (Nig.CARs.) 2015, which is the current Regulations has addressed Safety Recommendation 2017-035.



## APPENDICES

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## Appendix 1

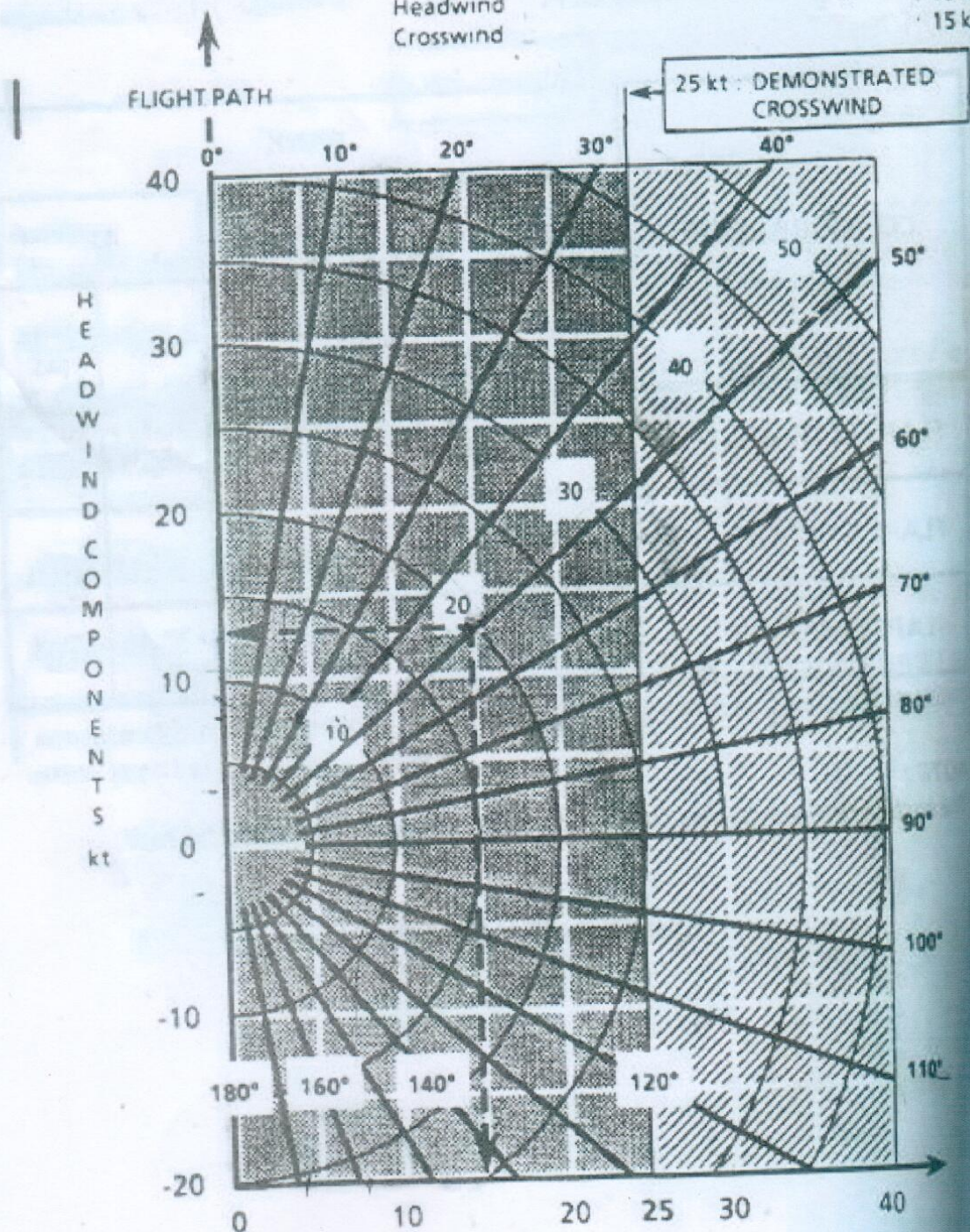


### Flight Training Aeronautical Experience Outline for the Private Pilot Course

S/No	Title	Code	Designation	Time	
1.	Sector Orientation	D1	Gen 1	1hr	Dual
2.	Effects of Control 1	D2	Gen 2	1hr	Dual
3.	Effects of Control 2	D3	Gen 3	1hr	Dual
4.	Straight and level 1	D4	Gen 4	1hr	Dual
5.	Straight and Level 2	D5	Gen 5	1hr	Dual
6.	Climb and Descent 1	D6	Gen 6	1hr	Dual
7.	Climb and Descent 2	D7	Gen 7	1hr	Dual
8.	Medium Level Turns	D8	Gen 8	1hr	Dual
9.	Slow Flight	D9	Gen 9	1hr	Dual
10.	Stall 1	D10	Gen 10	1hr	Dual
11.	Stall 2	D11	Gen 11	1hr	Dual
12.	Review for PC	D12	Gen 12	1hr 30min	Dual
13.	Progress Check 1	D13	Gen 13	1hr 30min	Dual
14.	Circuits and landing	D14	Gen 14	4hrs	Dual
15.	Circuits and landing (Emergencies + GO AROUND)	D15	Gen 15	1hr	Dual
16.	1 <sup>st</sup> Supervised Solo	D16	Gen 16	30min	Dual
17.	1 <sup>st</sup> Solo	S1	S1	30min	Solo
18.	2 <sup>nd</sup> Supervised Solo	D17	Gen 17	30min	Dual
19.	2 <sup>nd</sup> Solo	S2	S2	30min	Solo
20.	Solo Consolidation	S4	S4	1hr	Solo
21.	Standard Circuit Departure and Rejoining	D18	Gen 18	1hr	Dual
22.	Steep Level Turn	D19	Gen 19	1hr	Dual
23.	Solo Steep Turn	S5	S5	1hr	Solo
24.	Flapless & X-wind Take off approach and ldg	D20	Gen 20	1hr	Dual
25.	Solo Flapless T/O app. And landing	S6	S6	1hr	Solo
26.	Soft field T/O and landing	D21	Gen 21	1hr	Dual
27.	Solo Soft field T/O and landing	S7	S7	1hr	Solo
28.	Short Field T/O and Landing	D22	Gen 22	1hr	Dual
29.	Solo Short Field and landing	S8	S8	1hr	Solo
30.	180° glide accuracy approach & landing	D23	Gen 23	1hr	Dual
31.	Solo 180° glide accuracy app. & landing	S9	S9	1hr	Solo
32.	Forced Landing without Power (FLWOP)	D24	Gen 24	2hrs	Dual
33.	Solo Forced Landing without Power	S10	S10	1hr	Solo
34.	Forced Landing with power (FLWP)	D25	Gen 25	1hr	Dual
35.	Low level circuits	D26	Gen 26	1hr	Dual
36.	Instrument Appreciation	INS 1	IF 1	1hr	Dual
37.	Basic Instrument	INS 2	IF 2	1hr	Dual
38.	Navigation (Zaria-Funtua-Zaria)	Nav 1	Nav 1	1hr	Dual
39.	Solo Navigation (Zaria-Funtua-Zaria)	SN1	Solo Nav 1	1hr	Solo
40.	Navigation ( Zaria- Kaduna-Zaria)	Nav 2	Nav 2	1hr	Dual
41.	Solo Navigation (Zaria-Kaduna-Zaria)	SN 2	Solo Nav 2	1hr	Solo
42.	Navigation ( Zaria- Malumfashi-Zaria)	Nav 3	Nav 3	1hr 30min	Dual
43.	Solo Navigation ( Zaria –Mal –Fun -Zaria)	SN 3	Solo Nav 3	2hrs	Solo
44.	Navigation ( Zaria- Kano -Zaria)	Nav 4	Nav 4	2hrs	Dual
45.	Solo Navigation ( Zaria- Kano – Kad -Zaria)	SN 4	Solo Nav 4	3hrs	Solo
46.	Review for PPL Check Ride	D27	Gen 27	3hrs	Dual
47.	Progress Check 2	D28	Gen 28	1hr 30min	Dual

## WIND COMPONENTS

EXAMPLE: Wind speed : 20 kt  
Angle between wind direction and flight path : 50°  
Headwind : 13 kt  
Crosswind : 15 kt



**Appendix 2**

VOL. 1

ANNEX III



**FLYING PROGRESS  
RECORD**

COURSE

SP-27

STUDENT

KUNNUTI MATTHEW SEJURO (MAT)

ACHIMUGU

INSTRUCTOR

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5N-CBE

### Appendix 3

(2)

ANATEX III

EXERCISE	GEN:		INST:	NAV:	DATE: 24 <sup>th</sup> -09-12
Circuit & Landing					
A/C REGISTRATION	5N-CAL		FLYING INSTRUCTOR		A. CHINNAGO
FLYING TIME GMT	1400	1500			GRADE
01:HR:00:MIN					A
<p align="center"><b>COMMENTS</b></p> <p>Student was introduced to circuit pattern (i.e. upwind &amp; wind down B/kg final &amp; i/down) Demonstration / follow through circuit &amp; landing were shown to the student who showed eagerness to learn.</p>					
<p><b>RECOMMENDATIONS:</b></p> <p>To continue</p>					
					<p align="right"><i>A. Chinnago</i></p> <p align="right">SIGNATURE</p>

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5N-CBE

EXERCISE	Circuit 2 Landings			DATE: 25 <sup>th</sup> - 09 - 12
GEN:	INST:	NAV:		
A/C REGISTRATION	5N-CAL	FLYING INSTRUCTOR	Achim MUGU	
FLYING TIME GMT	0915	1015	GRADE	A
01:HR 00:MIN				
<p align="center"><b>COMMENTS</b></p> <p>Midway through circuit pattern flying Runway change was effected from Run 24 to Run 06 even though it disorientated the student it affort him the opportunity to acquaint himself with such changes.</p>				
<p><b>RECOMMENDATIONS:</b></p> <p>To continue</p>				
				<p align="right"><i>Achim MUGU</i> SIGNATURE</p>



5N-CBE

EXERCISE		GEN:	INST:	NAV:	DATE: 26 <sup>th</sup> -09-12
A/C REGISTRATION	5N-CAL		FLYING INSTRUCTOR	ACHIMUGU	
FLYING TIME GMT	1020	1115		GRADE	
00:HR55:MIN				A	

**COMMENTS**

1<sup>st</sup> CCI DEMONSTRATION  
 2<sup>nd</sup> CCI overshoot final approach  
 3<sup>rd</sup> " follow through  
 4<sup>th</sup> " follow through  
 5<sup>th</sup> CCI ok Ballooned before touch down

**RECOMMENDATIONS:**

to continue

  
SIGNATURE

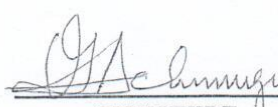
45



EXERCISE	GEN:	INST:	NAV:	DATE: 27 <sup>th</sup> 09-12
CIRCUITS & LANDINGS				
VC REGISTRATION	5N-CAB		FLYING INSTRUCTOR	Achmug
FLYING TIME GMT	0915	1015		GRADE A
01:HR 00:MIN				
<p align="center"><b>COMMENTS</b></p> <p>Improved circuit upto final approach but yet to achieve good round out and flare on landing</p>				
<p><b>RECOMMENDATIONS:</b></p> <p>To Continue</p>				
				<p align="right"><i>Achmug</i></p> <p align="right">SIGNATURE</p>



5N-CBE

EXERCISE		GEN:	INST:	NAV:	DATE: 28 <sup>th</sup> - 09 - 12
Circuits & Landings					
C REGISTRATION	5N-CAK		FLYING INSTRUCTOR	Achimugu	
LYING TIME GMT	0910	1010		GRADE	A
01:HR 00:MIN					
<b>COMMENTS</b>					
<p>1<sup>st</sup> cci Demonstration</p> <p>2<sup>nd</sup> cci Pattern ok but low on final Approach</p> <p>3<sup>rd</sup> " " " poor Roundout before touchdown</p> <p>4<sup>th</sup> Demonstration</p> <p>5<sup>th</sup> <del>Approach</del> (wide circuit) leaving ht</p> <p>6<sup>th</sup> Demonstration</p>					
<b>COMMENDATIONS:</b>					
To continue					
					 SIGNATURE



5N-CBE

EXERCISE	GEN:	INST:	NAV:	DATE: 29 <sup>th</sup> 09-12
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CIRCUITS & LANDING

C REGISTRATION	5N-CBB	FLYING INSTRUCTOR	Achimugu
LYING TIME GMT	0635	0740	GRADE
01:HR:05:MIN	0740	0800 Solo	A

**COMMENTS**

1<sup>st</sup> CCI Pattern OK Approach & Touchdown OK  
 2<sup>nd</sup> " " " " " "  
 3<sup>rd</sup> " " " " " "  
 4<sup>th</sup> " " good " " " good  
 5<sup>th</sup> " " good " " " good

Performance was safe thus student was  
 Cleared for 1<sup>st</sup> solo which he successfully  
 Completed

**RECOMMENDATIONS:**

To Continue

*Achimugu*  
 SIGNATURE



5N-CBE

EXERCISE	GEN:	INST:	NAV:	DATE: 02-10-12
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CIRCUITS AND LANDINGS (2<sup>nd</sup> SUPERVISED SET)

IC REGISTRATION	5N-CBA	FLYING INSTRUCTOR	BARA'u
FLYING TIME GMT	0640	0720	GRADE
00:HR 40:MIN			A

**COMMENTS**

Pre flight — O.K  
start up to taxi — O.K  
Run up checks — O.K  
Take-off ⇒ good

	<u>CIRCUITS</u>	<u>APPROACH</u>	<u>LANDING</u>
1 <sup>st</sup>	O.K	good	good
2 <sup>nd</sup>	O.K	good	good
3 <sup>rd</sup>	O.K	good	good.

Student's Look out, communication, Approach and Landings were good.


**COMMENDATIONS:**

Cleared for  
Solo Consolidation

Good  
SIGNATURE



5N-CBE

EXERCISE	GEN:	INST:	NAV:	DATE: 10-10-12
<i>Confidence flight</i>				
IC REGISTRATION	5N-CBG		FLYING INSTRUCTOR	MAIKANO
FLYING TIME GMT	0740	0925		GRADE
00 :HR 45 :MIN				NG
<b>COMMENTS</b>				
<p>The student needs to overcome some fear, he needs more confidence building measures.</p>				
<b>RECOMMENDATIONS:</b>				
<p>He needs to be talked to, to build his confidence</p>				
				 SIGNATURE



5N-CBE

EXERCISE	GEN:	INST:	NAV:	DATE: 13/10/12
COTS & LOGS				
IC REGISTRATION	5N-CAN	FLYING INSTRUCTOR	MAIKANO	
FLYING TIME GMT	0955	1055	GRADE	A-
01:HR 00:MIN				
<b>COMMENTS</b>				
<ol style="list-style-type: none"> <li>1. Demo</li> <li>2. Talked down</li> <li>3. ✓ ✓</li> <li>4. Unassisted</li> <li>5. Demo</li> </ol> <p><u>He needs to be confident, to brief</u> <u>him.</u></p>				
<b>RECOMMENDATIONS:</b>				
To continue				
				 SIGNATURE



EXERCISE	GEN: <input checked="" type="checkbox"/>	INST:	NAV:	DATE: 15-10-12
CCPS & LOGS				
VC REGISTRATION	5N-CBG		FLYING INSTRUCTOR	MAIKANO
FLYING TIME GMT	0805	0910		GRADE
01:HR 05:MIN				A

**COMMENTS**

1. Follow through -  
Briefed the Student on the approach profile,  
Round, out and touch down.
1. Follow through
  2. ok
  3. ok
  4. ok
  5. ok needs to hold up nose after Touchdown
  6. ok
- ✓ ✓ ✓ ✓ ✓ ✓

Marked improvement, still not confident.

**RECOMMENDATIONS:**

To Continue

*[Signature]*

SIGNATURE



5N-CBE

EXERCISE	GEN:	INST:	NAV:	DATE: 18-10-12
CCTS & LAGS				
IC REGISTRATION	5N-CBG		FLYING INSTRUCTOR	MAIKANO
FLYING TIME GMT	0645	0725		GRADE A
00:HR 40:MIN				
<p><u>CCTS &amp; LAGS</u> <b>COMMENTS</b></p> <ol style="list-style-type: none"> <li>1. Talked down</li> <li>2. Unassisted</li> <li>3. Unassisted</li> <li>4. Unassisted</li> <li>5. Unassisted</li> </ol> <p>The student is ready but could not clear his solo due approaching low cloud.</p>				
<p><b>RECOMMENDATIONS:</b></p> <p>To Continue</p>				
				<p></p> <p>SIGNATURE</p>



5N-CBE



EXERCISE	GEN:	INST:	NAV:	DATE: 19-10-12
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cc 1st Supervised solo

VC REGISTRATION	5N-CAQ	FLYING INSTRUCTOR	MAIKANO
FLYING TIME GMT	1610	1645	GRADE
00:HR 35:MIN			A

**COMMENTS**

1. Landed massisted not on centre line
2. ✓ ✓
3. ✓ ✓ not very steady
4. ✓ ✓ - ok needs to hold up more
- 5.

Completely satisfied the student  
is confident and can correct for his  
mistakes.

**RECOMMENDATIONS:**

Clear solo

SIGNATURE



5N-CBE

EXERCISE	GEN:	INST:	NAV:	DATE: 22-10-12
2nd supervised solo				
VC REGISTRATION	5N-CBB	FLYING INSTRUCTOR	MALIKANO	
FLYING TIME GMT	0900	0925	GRADE	A
00HR 25MIN				
<b>COMMENTS</b>				
<p>1. Landed unassisted steady and on 2-go</p> <p>2. ✓ ✓ ✓ - - - - -</p> <p>A very good flight</p>				
<b>RECOMMENDATIONS:</b>				
Cleared 2nd solo				
				SIGNATURE

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5N-CBE

EXERCISE	GEN:	INST:	NAV:	DATE: 27-11-12
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SOFT FIELD

VC REGISTRATION	5N-CBG	FLYING INSTRUCTOR	1ND
FLYING TIME GMT			GRADE
:HR :MIN	1240 1350		A

**COMMENTS**

Intro: -ok

Climb out speed - remember Attitude.

Climbing turn - student remember Attitude.

Turning base - student should remember // to Rwy

To	CCW	APR	LDG
ok	ok	ok	fair
ok	ok	ok	fair
ok	ok	ok	good
ok	ok	ok	good
✓	✓	✓	✓

**RECOMMENDATIONS:**

Cleared solo

*[Signature]*  
SIGNATURE

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