KOMITE NASIONAL KESELAMATAN TRANSPORTASI
REPUBLIC OF INDONESIA

FINAL

KNKT.18.07.28.04

Aircraft Accident Investigation Report

Balai Pendidikan & Pelatihan Penerbangan Banyuwangi

Cessna 172 S; PK-BYK

Blimbingsari Airport, Banyuwangi, East Java

Republic of Indonesia

30 July 2018

2022

This final report is published by the Komite Nasional KeselamatanTransportasi (KNKT), 3rd Floor Ministry of Transportation, Jalan Medan Merdeka Timur No. 5 Jakarta 10110, Indonesia.

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

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Jakarta, 26 December 2022

KOMITE NASIONAL
KESELAMATAN TRANSPORTASI
CHAIRMAN

SOERJANTO TJAHJONO

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ABBREVIATIONS AND DEFINITIONS

ARFF	:	Airport Rescue and Fire Fighting
ATC	:	Air Traffic Controller
BP3B	:	*Balai Pendidikan dan Pelatihan Penerbang Banyuwangi*
CASR	:	Civil Aviation Safety Regulation
DGCA	:	Directorate General of Civil Aviation
DOA	:	Directorate of Airport
FAA	:	Federal Aviation Administration
FI	:	Flight Instructor
ICAO	:	International Civil Aviation Organization
KNKT	:	Komite Nasional Keselamatan Transportasi
LT	:	Local Time
m	:	Meter
MFD	:	Multi Function Display
NOTAM	:	Notices To Airmen
PF	:	Pilot Flying
PFD	:	Primary Flight Display
PPL	:	Private Pilot License
UTC	:	Universal Time Coordinate

SYNOPSIS

On 30 July 2018, a Cessna C172S aircraft registered PK-BYK was being operated by *Balai Pendidikan dan Pelatihan Penerbang Banyuwangi* (BP3B) on a night flying touch and go training, at Blimbingsari Airport (WADY), Banyuwangi. On board the aircraft were one Flight Instructor (FI) and two student pilots.

At 1751 LT, on a twilight condition the aircraft departed using runway 26. On the first touch and go, the student pilot 1 and the FI performed electrical failure simulation excercise, then perform short approach exercise on the second touch and go, followed by simulated engine failure after takeoff on the third touch and go training.

The flight continued and when the aircraft was joining right downwind, the FI took over the control while the student pilot 2 moving to the left pilot seat to take the aircraft control as PF and the student pilot 1 moving to passenger seat. After the student pilot 2 ready, the FI handed over control to student pilot 2 and the FI would simulate the electrical failure.

At 1820 LT, on a night condition, the tower controller issued touch and go clearance. Afterwards, the FI switches the master switch to OFF position. The landing light, instrument lights and navigation lights were off, Multi-Function Display (MFD) was off, the background light intensity of the Primary Flight Display (PFD) dimmed, and the right radio communication was off. The standby instrument light still illuminated.

The aircraft landed on runway 26 and during the landing roll, the FI attempted to switch on the master switch. The FI could not locate the master switch and the student pilot 2 initiated to assist the FI to switch ON the master switch. While the FI and PF attempted to locate the master switch, the aircraft veered to the left. The FI took over control the aircraft after realized that the aircraft veered to the left and travelled in the excavated area about 50 cm depth in the left side runway between taxiway C and D. The aircraft then veered to the right and returned to the runway and stopped on the runway on heading approximately 60°.

No one injured as a result of this occurrence and the aircraft was substantially damaged.

The Komite Nasional Keselamatan Transportasi (KNKT) concluded the contributing factors were as follows:

- While attempting to select the master switch to ON position, both pilots unable to locate the switch in a dark environment without head lamp.
- There was no tasks distribution in the cockpit and both pilots were focused to locate the master switch and no one control the aircraft direction, resulted in the aircraft direction could not be maintained and aircraft veered to the right.

The KNKT acknowledged that the safety actions taken by the related parties were relevant to improve safety, however there are safety issues that remain to be considered. The KNKT issued safety recommendations to address the safety issues identified in this report

1 FACTUAL INFORMATION

1.1 History of the Flight

On 30 July 2018, a Cessna C172S aircraft registered PK-BYK was being operated by *Balai Pendidikan dan Pelatihan Penerbang Banyuwangi* (BP3B) on a night flying touch and go training, at Blimbingsari Airport (WADY), Banyuwangi[1]. On board the aircraft were one Flight Instructor (FI) and two student pilots. The student pilot 1, occupied the left pilot seat acted as pilot flying, the FI occupied the right pilot seat, while the student pilot 2 seated on the passenger seat.

At 1051 UTC (1751 LT), on a twilight condition the PK-BYK aircraft departed Runway 26 and was instructed to join right downwind by Blimbingsari Airport Tower controller (the Tower controller).

When the aircraft joined right base leg, the FI performed simulated electrical failure exercise by switching the electrical master switch (master switch) to OFF position. The landing light, instrument lights and navigation lights were off, Multi Function Display (MFD) was off, the background light intensity of the Primary Flight Display (PFD) dimmed, and the right radio communication was off. The standby instrument light still illuminated.

At 1800 LT, the Tower controller issued clearance for touch and go. After the aircraft touched down, the FI set the master switch to ON position and all lights and instrument returned to normal, thereafter student pilot 1 continued to takeoff. On the second touch and go the FI performed short approach exercise and on the third touch and go the FI performed simulated engine failure after takeoff. All exercises were performed uneventfully.

The flight continued and when the aircraft was joining right downwind, the FI took over the control and the student pilots changed the role. The student pilot 1 moved to passenger seat and the student pilot 2 moved to the left pilot seat to take the aircraft control as PF. After the student pilot 2 ready, the FI handed over control to student pilot 2.

While the aircraft position was on the right base leg, the student pilot 2 informed to the Tower controller that they would perform electrical failure exercise. The Tower controller acknowledged and advised to report when the aircraft position on final. Afterwards, the FI switched the master switch to OFF position and the approach continued.

At 1820 LT, on a night condition, the Tower controller issued a clearance for touch and go. The aerodrome visibility was reported 7 km and the wind was reported calm.

The aircraft touched down on Runway 26 and during the landing roll, the FI attempted to switch ON the master switch. The FI could not locate the master switch and the student pilot 2 initiated to assist the FI to switch on the master switch.

While the FI and PF was attempting to locate the master switch, the aircraft veered to the left. When realized that the aircraft veered to the left, the FI took over control the aircraft. The aircraft travelled out from runway pavement and the FI attempted to

1 Blimbingsari Airport (WADY), Banyuwangi will be named as Banyuwangi for the purpose.

recover by applying the right rudder pedal and steered the control column to the right. The aircraft veered to the right and returned to the runway. The aircraft continued turn to the right and stopped on the runway on a heading of approximately 060°.

After the last communication with the pilot, the Tower controller could not identify the location of the PK-BYK aircraft and called the PK-BYK pilot six times which were not responded. The Tower controller then asked the pilot of another training aircraft that was on downwind about the position of the PK-BYK aircraft. The pilot of another training aircraft also unable to locate the PK-BYK aircraft.

The Assistant Tower controller went out from tower cab to observe the PK-BYK aircraft position and noticed that the PK-BYK aircraft was stop on the runway near taxiway D on tilted position. The Tower controller then activated the siren and crash bell to notify the Airport Rescue and Fire Fighting (ARFF) personnel. The ARFF personnel deployed and arrived near the aircraft position afetrward sprayed the foam.

After the aircraft stopped, all occupants evacuated the aircraft. No one injured as a result of this occurrence and the aircraft was substantially damaged.

1.2 Damage to aircraft

The aircraft was substantial damages, the details of the damaged were as follows:

- Right main landing gear detached;
- Nose landing gear collapse and wheel fairing broken;
- Right wing tip and elevator tip wrinkled;
- Both propeller blade tips scratched; and
- Lower fuselage scratched.

Figure 1: Damaged of the aircraft

1.3 Personnel Information

The student pilot 1 was an Indonesia male, held a valid Private Pilot License (PPL) and first-class medical certificate. The total flying hour of the student pilot 1 was 152 hours, including 9 hours of night flying.

The student pilot 2 was an Indonesian male, held a valid PPL and first-class medical certificate. The total flying hour of the student pilot 2 was 152 hours 30 minutes.

The Flight Instructor (FI) was an Indonesia female, 25 years old who held a valid Commercial Pilot License and first-class medical certificate. The FI qualified instrument rating which valid until 31 October 2018. The FI last proficiency check was conducted on 3 October 2017. The total hours flying hour of the FI was as 1,359 hours 35 minutes.

1.4 Aircraft Information

1.1.1 General

Registration Mark	:	PK-BYK
Manufacturer	:	Cessna Aircraft Company
Country of Manufacturer	:	United States of America
Type/Model	:	172 S
Serial Number	:	172S11697
Year of Manufacture	:	2016
Certificate of Airworthiness		
Validity	:	8 December 2018
Category	:	Normal
Limitations	:	None
Certificate of Registration		
Number	:	3883
Issued	:	9 December 2016
Validity	:	8 December 2019
Time Since New	:	956.26 hours
Cycles Since New	:	1,182 cycles
Last Major Check	:	100 hours inspection on 6 July 2018
Last Minor Check	:	50 hours inspection on 26 July 2018

1.1.2 Electrical System

The relevant of the aircraft electrical system described on the Pilot Operating Handbook, section 7: Airplane and Systems Description, were as follows:

Electrical System

The airplane is equipped with 28 volts direct current (DC) electrical system. A belt driven 60 ampere alternator powers the system. 24 volts main storage battery is located inside the engine cowling on the left firewall. The alternator and main battery are controlled through the MASTER switch found near the top of the pilots switch panel.

Power is supplied to most electrical circuits through two primary buses (ELECTRICAL BUS 1 and ELECTRICAL BUS 2), with an essential bus and a cross-feed bus connected between the two primary buses to support essential equipment.

The system is equipped with a secondary or standby battery located between the firewall and the instrument panel. The STBY BATT switch controls power to or from the standby battery. The standby battery is available to supply power to essential bus in the event that alternator and main battery power sources have both failed.

The primary buses are supplied with power whenever the MASTER switch is turned on, and are not affected by starter or external power usage. Each primary bus is also connected to an avionics bus through a circuit breaker and the avionics bus 1 and bus 2 switches. Each avionics bus is powered when the MASTER switch and the corresponding AVIONICS switch are in the ON position.

CAUTION

BOTH BUS 1 AND BUS 2 AVIONICS SWITCHES SHOULD BE TURNED OFF TO PREVENT ANY HARMFUL TRANSIENT VOLTAGE FROM DAMAGING THE AVIONICS EQUIPMENT PRIOR TO TURNING THE MASTER SWITCH ON OR OFF, STARTING THE ENGINE OR APPLYING AN EXTERNAL POWER SOURCE.

The airplane includes a power distribution module, located on the left forward side of the firewall, to house all the relays used in the airplane electrical system. The Alternator Control Unit (ACU), main battery current sensor, and the external power connector are also housed within the module.

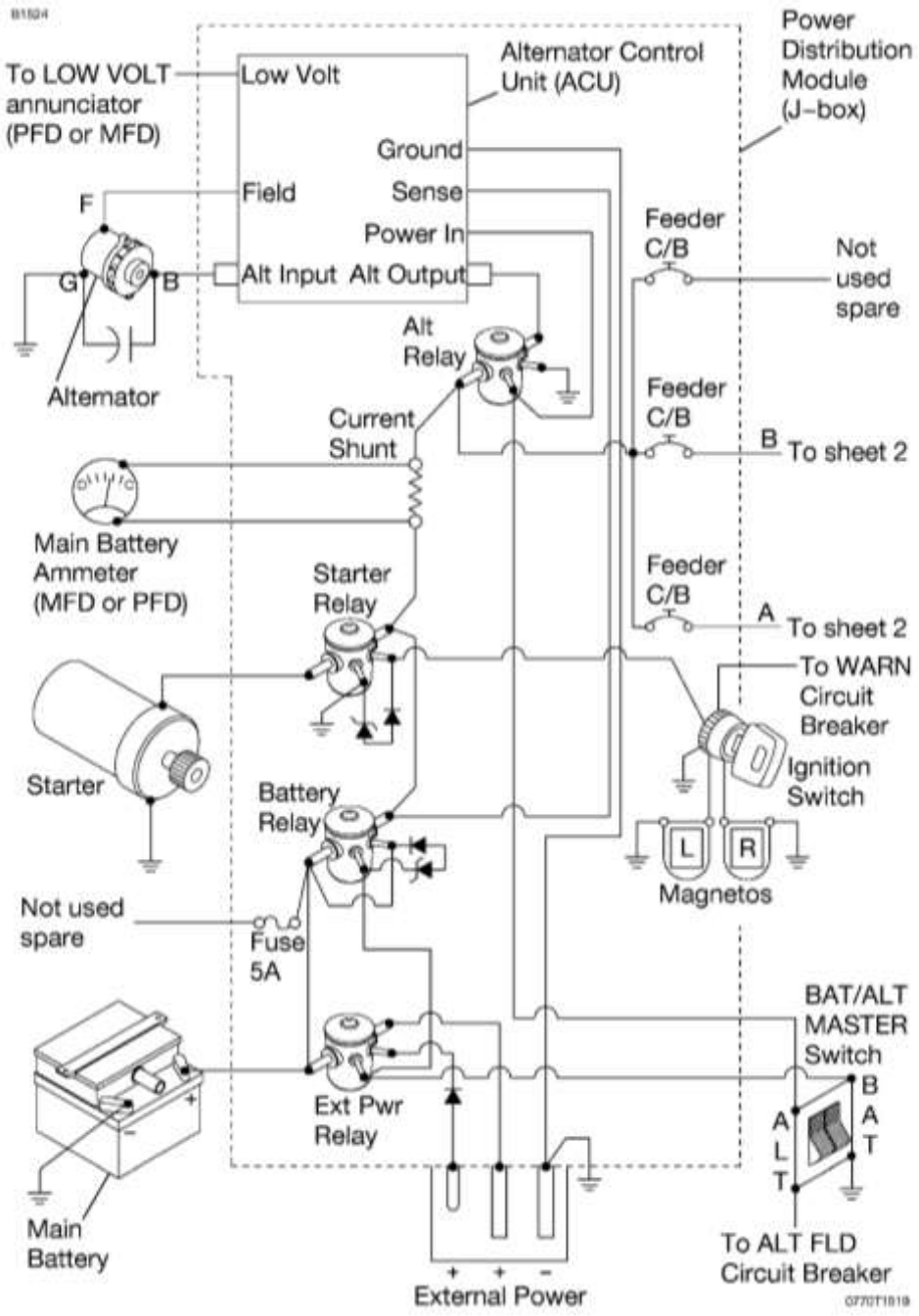

Figure 2. Schematic diagram of Master Switch

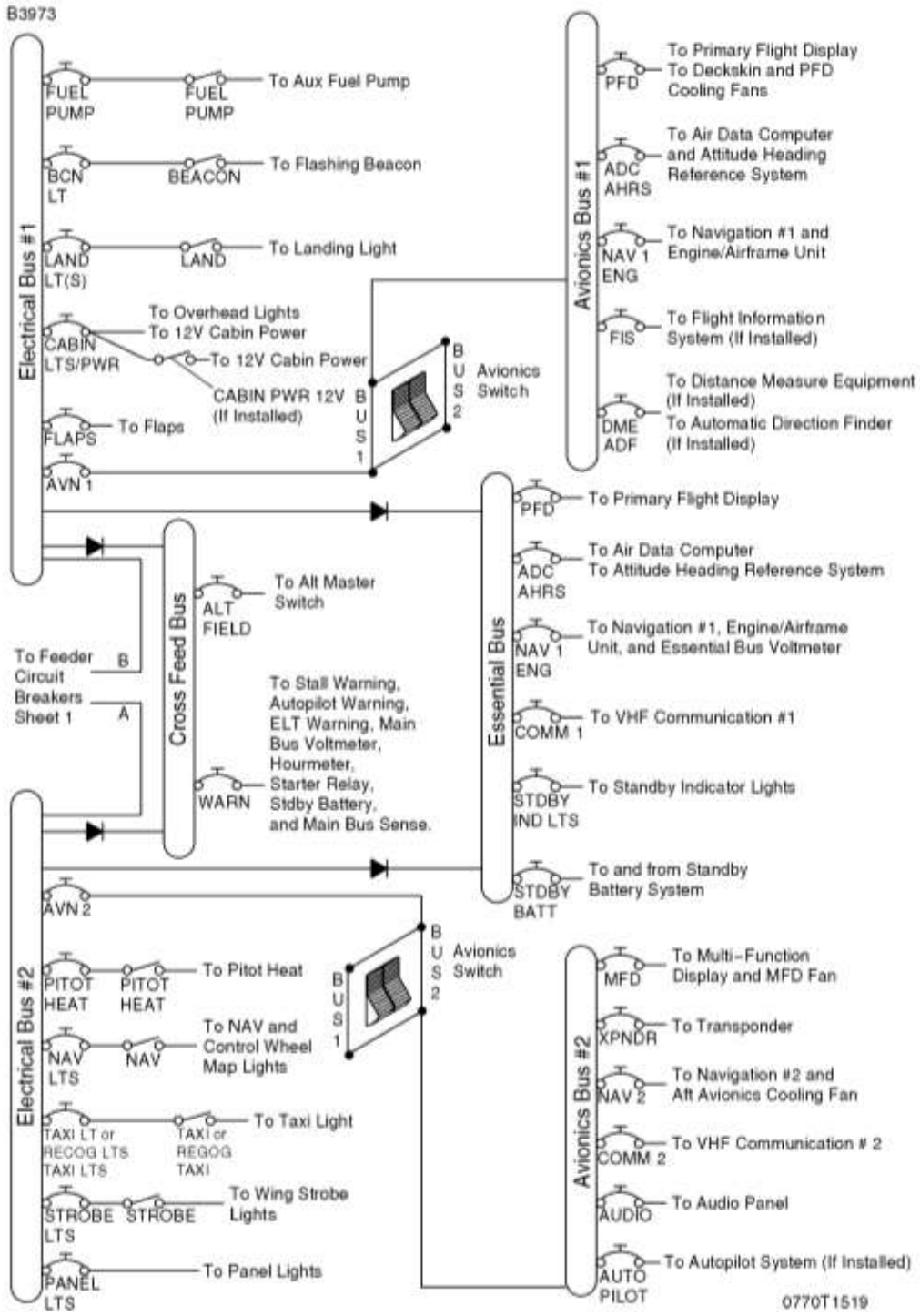

Figure 3. Schematic diagram of Avionic Switch

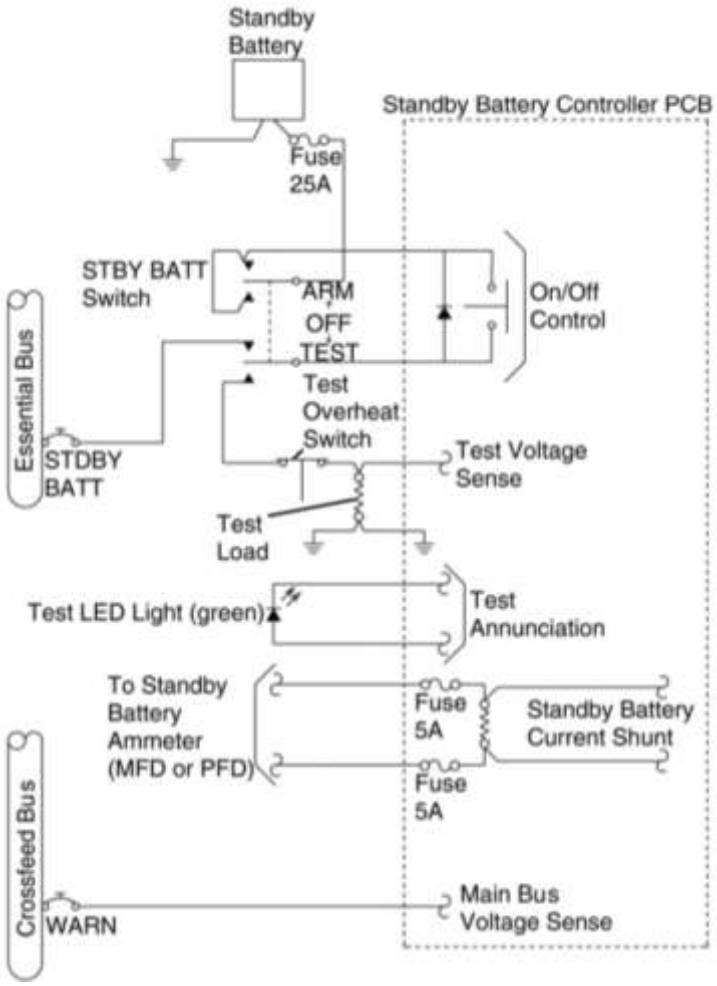

Figure 4. Schematic diagram of Standby Battery Switch

MASTER SWITCH

The MASTER switch is a two-pole, rocker-type switch. The BAT side of the switch controls the main battery electrical power to the airplane. The ALT side of the switch controls the alternator system.

In normal operation, both sides of the switch (ALT and BAT) are ON simultaneously; however, the BAT side of the switch may be selected separately as necessary. The ALT side of the switch cannot be set to ON without the BAT side of the switch also being set to ON.

If the alternator system fails, the MASTER switch may be set in the OFF position to preserve main battery capacity for later in the flight.

With the MASTER switch OFF and the STBY BATT switch in the ARM position, the standby battery will power the essential bus for a limited time. Time remaining may be estimated by monitoring essential bus voltage. At 20 Volts, the standby battery has little or no capacity remaining.

STANDBY BATTERY SWITCH

The STBY BATT master switch is a three position (ARM-OFF-TEST) switch that test and controls the standby battery system. The energy level of the battery shall be checked before starting the engine, Refer to Section 4, by placing the switch in the momentary TEST position and observing the correct illumination of the TEST lamp found to the right of the switch. Energy level tests after starting engine are not recommended.

Placing the switch in the ARM position during the engine start cycle allows the standby battery to help regulate and filter essential bus voltage during the start cycle. The switch is set to the ARM position during normal flight operation to allow the standby battery to charge and to be ready to power the essential bus in the event of alternator and main battery failure. Placing the switch in the OFF position disconnects the standby battery from the essential bus. Operation with the STBY BATT switch in the OFF position prevents the standby battery from charging and from automatically providing power should an electrical system failure occur.

AVIONICS SWITCH

The AVIONICS switch is a two-pole rocker-type switch that controls electrical power to AVIONICS BUS 1 and BUS 2. Placing either side of the rocker switch in the ON position supplies power to the corresponding avionics bus. Both sides of the AVIONICS switch should be placed in the OFF position before turning the MASTER switch ON or OFF, starting the engine, or applying an external power source.

The master switch position on the aircraft was shown on the following figure:

Figure 5: The electrical system switch position

1.5 Aerodrome Information

Airport Name	:	Blimbingsari Airport
Airport Identification	:	WADY
Airport Operator	:	PT. Angkasa Pura II
Airport Certificate	:	028/SBU-DBU/VIII/2010
Coordinate	:	8°18’38” S 114°20’24” E
Elevation	:	105 feet
Runway Direction	:	26-08
Runway Length	:	2,250 m
Runway Width	:	30 m
Surface	:	Asphalt

According to the Notification to Airmen (NOTAM) number C5426/18, effective since 21 May 2018 until 20 August 2018, stated that the taxiway C was close due to work in progress. At the time of the occurrence, the surface in the left side of the runway between taxiway C and D was excavated about 50 centimeters depth.

Figure 6: The excavated runway shoulder position and condition

1.6 Wreckage and Impact Information

Tire marks found on the runway showed that after touchdown, the aircraft veered to the left and travelled out from the runway into the excavated area on the left side of the runway. The mark of the right main wheel passed the mound at the end of excavated runway shoulder. The ground scars mark showed the aircraft travelled out of the excavated area and crossed taxiway D and continued exited the taxiway pavement. Afterwards, the tyre mark showed the aircraft passed taxiway and runway lights then travelled back to runway surface.

The aircraft stopped on runway about 1,200 meters from beginning runway 26 on heading approximately 060° and tilted to the right.

Several ground marks were found as follows:

- Right and left main landing gear marks on left excavated runway 26 shoulder;
- Scratch mark on taxiway D;
- Propeller scratch marks on runway near the location of aircraft stopped.

Figure 7: The right and left main landing gear marks

Figure 8: Scratch marks on taxiway D

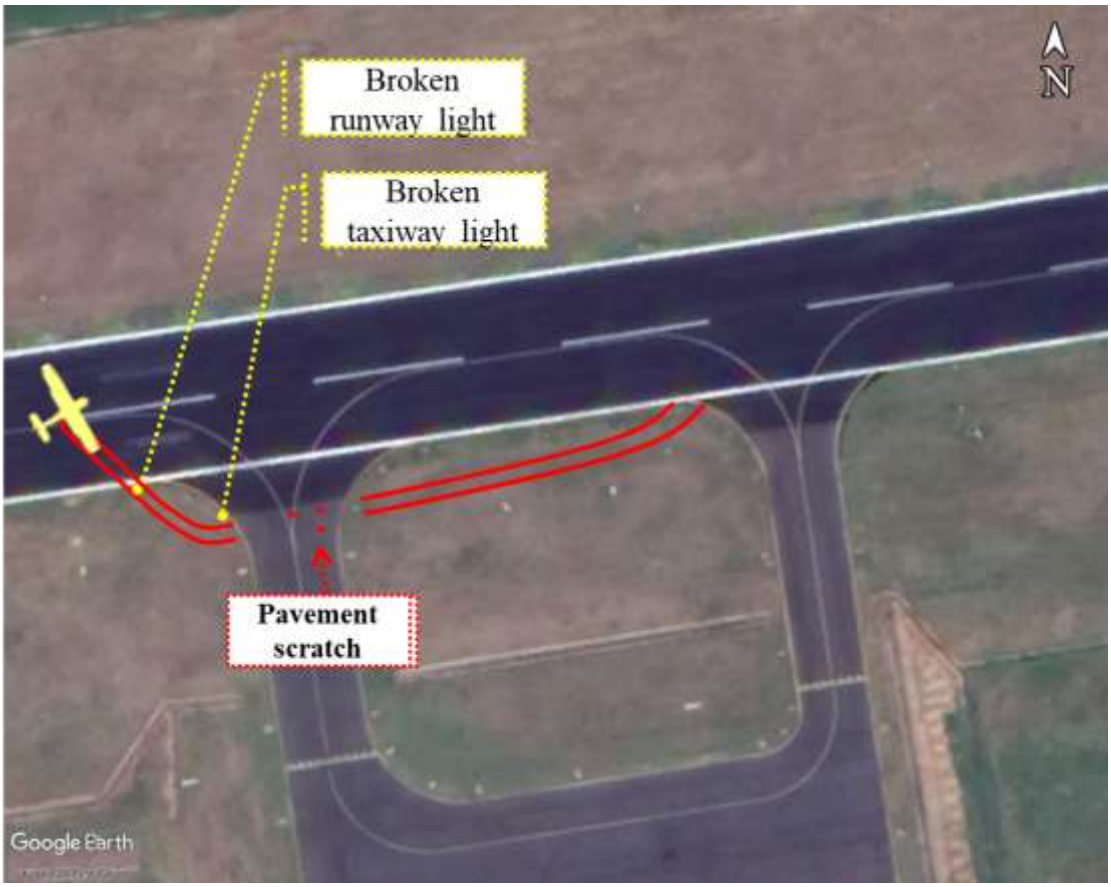

Figure 9: Illustration of the aircraft movement

1.7 Survival Aspects

After the aircraft stopped, all occupants were evacuated by themselves through the left cockpit door while the right cockpit door could not be opened. The occupants were taken to hospital for medical examination and no injury was reported.

1.8 Organizational and Management Information

1.1.3 Aircraft Operator

The *Balai Pendidikan dan Pelatihan Penerbang Banyuwangi* (BP3B) was a flying school which held Pilot School Certificate number PSC 141-014. The BP3B operates 35 Cessna 172 and two PA-34 aircraft.

The BP3B has Flight Instructor Guidance which contain the guidance to conducted exercises including electrical failure exercises. The electrical failure exercise is one of the exercises that was required to be conducted during night flying training. The guidance to be followed was as follows:

During the execution:

1. Call tower : request electrical fail simulation
2. Electrical : Check
3. Flaps : Adjust
4. All Light : OFF
5. Avionic : OFF
6. Master : OFF
7. Speed : As required

During the recovery

1. Keep rolling : Make sure centerline
2. Below 40 knots Check
   - Master : ON
   - Avionic : ON
   - Lights : ON
   - Flaps : 10 (if touch and go)

The guidance also mentioned that during the exercise, each crew member must carry a head lamp. There was no additional information on how to use headlamp during exercise. At the time of the occurrence, the flight crew did not use the head lamp.

1.1.4 Directorate General of Civil Aviation

Civil aviation in Indonesia is regulated and oversighted by Directorate General of Civil Aviation (DGCA) under the Ministry of Transportation.

The DGCA has several directorates including the Directorate of Airport (DOA) that responsible in formulating regulations including supervision of aerodrome operation and issuance of aerodrome certificate.

1.1.4.1 Regulation on Surface Runway Strip

The Civil Aviation Safety Regulation (CASR) Part 139 described the detail of operational and technical standard for aerodrome is contained in the Manual of Standard CASR Part 139 Volume I (MOS 139).

The MOS 139 subchapter 3.4.10 requires the surface of the runway strip adjacent to the runway, shoulder or stopway shall be flush with the runway surface, shoulder or stopway.

1.9 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 ANALYSIS

The investigation examined the ground marks, information from interview, damage found on the aircraft and other relevant information from operator manuals. The investigation focused on aircraft control during recovery from electrical failure exercise.

2.1 Aircraft control during recover from electrical failure exercise

After touchdown, while the aircraft rolling, the FI intended to switch ON the master switch, to return the lights and instruments to normal condition. The FI reported having difficulties to locate the master switch.

The master switch is located on the left of cockpit instrument panel while the FI seated on the right seat. The FI left hand required to cross the student pilot in order to reach the master switch.

The FI has successfully conducted electrical failure exercise while flying with the student pilot 1. The exercise was conducted during the twilight. The second electrical failure exercise was conducted at night when the environment was darker. The instructor guidance manual requires the pilot to have head lamp during night flying exercise and none of the pilots in this flight had a head lamp. The lighting condition and by not wearing head lamp increased the difficulty to locate the master switch compare to the first electrical failure exercise.

The student pilot 2 who seated on the left pilot seat, noticed the difficulty of the FI to locate the master switch and intended to assist the FI. To be able to locate the master switch, the student pilot 2 would have been changed the attention from controlling the aircraft direction to the instrument panel to locate the master switch.

There was no transfer of control between student pilot 2 to FI and both pilots were focused to locate the master switch. None of the pilot focused on control the aircraft direction, resulted in the directional control could not maintained until the aircraft veered to the left off the runway. The FI took over the aircraft control and attempted to recover the aircraft direction to return to the runway.

The tire marks found indicated that aircraft travelled in excavated area on the left shoulder of the runway then the right main landing gear impacted mound of land before the aircraft re-enter the runway and stopped. The impact might have made the right main landing gear collapsed and turned the aircraft heading almost opposite to the landing direction.

The closing of taxiway C had been informed in the Notam that was effective for two months before the occurrence. However, there was no sign or indication available to the pilot that there was an excavated area in the runway strip. The MOS 139 requires the surface of the runway strip adjacent to the runway, shoulder or stopway shall be flush with the runway surface, shoulder or stopway. However, due to the work on the runway shoulder without properly marked for day and night operation, may reduce the pilot awareness resulted in the aircraft damage when passed by the veered off aircraft.

3 CONCLUSIONS

3.1 Findings

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.

In this occurrence, the KNKT identified several findings as follows:

1. The aircraft had valid Certificate of Airworthiness, Certificate of Registration and was operated within the correct weight and balance envelope. No aircraft system malfunction reported before the occurrence.
2. According to the Notam number C5426/18, the taxiway C was close due to work in progress. The Notam was effective since 21 May 2018 until 20 August 2018.
3. At the time of the occurrence, the surface in the left side of the runway at position between taxiway C and D was excavated about 50 centimeters depth
4. The Student Pilots and Flight Instructor held valid licenses and medical certificates;
5. At 1051 UTC (1751 LT), on a twilight condition the PK-BYK aircraft departed using runway 26 and was instructed to join right downwind by tower controller.
6. When the aircraft joined right base leg, the Student Pilot 1 and Flight Instructor (FI) simulated electrical failure by switches the electrical master switch (master switch) to OFF position.
7. The landing light, instrument lights and navigation lights were off, Multi-Function Display (MFD) was off, the background light intensity of the Primary Flight Display (PFD) dimmed, and the right radio communication was off. The standby instrument light still illuminated.
8. At 1800 LT, the aircraft touchdown. the FI set the master switch to ON position and all lights and instrument returned to normal, thereafter Student Pilot 1 continued to takeoff.
9. The first electrical failure exercise on twilight condition was successfully performed.
10. On the second touch and go the FI simulated short approach exercise and on the third touch and go simulated engine failure after takeoff.
11. When the aircraft was joining right downwind, the student pilot 2 moving to the left pilot seat to be the pilot flying and the student pilot 1 seated on the passenger seat. The FI and the student pilot 1 would perform simulated electrical failure.
12. At 1820 LT, on a night condition, the tower controller issued clearance for touch and go. Afterwards, the FI switches the master switch to OFF position and the approach continued until the aircraft touch down.
13. During the landing roll, the FI attempted to select the master switch ON position, however the FI could not locate the master switch then the student pilot 2 assisted to find the master switch.

14. There was no transfer of control between PF to PM to distribute the tasks in the cockpit and both pilots were focused to locate the master switch. None of the pilot focused on control the aircraft direction, resulted in the directional control could not maintained until the aircraft veered off to the left.
15. The FI took over the aircraft control and attempted to recover the aircraft direction to return to the runway.
16. The aircraft travelled in excavated area in the left runway then the right main landing gear hit mound of land before the aircraft re-enter the runway and stopped.
17. The right main landing gear collapse and the aircraft stopped on heading almost opposite to the landing direction.
18. The instructor guidance manual requires the pilot to have head lamp during night flying exercise and none of the pilots in this flight had a head lamp. The absence of the head lamp might increase the difficulty to locate the master switch in dark environment.
19. The MOS 139 requires the surface of the runway strip adjacent to the runway, shoulder or stopway shall be flush with the runway surface, shoulder or stopway.

3.2 Contributing Factors

Contributing factors is defined as action, omissions, events, conditions, or a combination thereof, which, if eliminated, avoided or absent, would have reduced the probability of the accident or incident occurring, or mitigated the severity of the consequences of the accident or incident.

The KNKT concluded the contributing factors were as follows:

- While attempting to select the master switch to ON position, both pilots unable to locate the switch in a dark environment without head lamp.
- There was no tasks distribution in the cockpit and both pilots were focused to locate the master switch and no one control the aircraft direction, resulted in the aircraft direction could not be maintained and aircraft veered to the right.

4 SAFETY ACTION

On August 2018, the BP3B revised the Flight Instructor Guidance related to electrical failure exercise. Thereafter, on 27 September 2021, the Akademi Penerbang Banyuwangi revised the training syllabus and removed the electrical failure exercise from the syllabus.

5 SAFETY RECOMMENDATIONS

The KNKT acknowledged the safety actions taken by the BP3B, however there still remain safety issues that need to be considered. Therefore, the Komite Nasional Keselamatan Transportasi issued several safety recommendations addressed to:

5.1 Blimbingsari Airport

- **04.B-2022-28.1**

  The closing of taxiway C had been informed in the Notam that was effective on the day of the occurrence. There was no sign or indication available to the pilot that there was an excavated area in the runway strip. The MOS 139 requires the surface of the runway strip adjacent to the runway, shoulder or stopway shall be flush with the runway surface, shoulder or stopway. However, due to the work on the runway shoulder without properly marked for day and night operation may reduce the pilot awareness, resulted in the aircraft damage when passed by the veered off aircraft. Therefore, KNKT recommends to ensure the hazard surround the movement area are properly mitigated and marked.

6 APPENDICES

6.1 Flight Instructor Guidance issued 1 Revision 0 dated May 2018

	BALAI PENDIDIKAN DAN PELATIHAN PENERBANG BANYUWANGI CESSNA 172SP TRAINING PROCEDURES	**EMERGENCY**

V. ELECTRICAL FAILURE EXERCISE (NIGHT FLIGHT)

A. EXECUTION:

1) CALL TOWER	REQUEST ELECTRICAL FAIL SIMULATION
2) ELECTRICAL	CHECK
3) FLAPS	ADJUST
4) ALL LIGHTS	OFF
5) AVIONIC	OFF
6) MASTER	OFF
7) SPEED	AS REQUIRED

B. RECOVERY

1) KEEP ROLLING	MAKE SURE CENTERLINE
2) BELOW 40 Kt	
• MASTER	ON
• AVIONIC	ON
• LIGHTS	ON
• FLAPS	10 (IF TOUCH AND GO)

NOTE :

- DURING NIGHT FLIGHT EXERCISE, EACH CREW MEMBERS MUST CARRY A HEAD LAMP

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