



**KOMITE NASIONAL KESELAMATAN TRANSPORTASI
REPUBLIC OF INDONESIA**

SHORT SUMMARY REPORT

KNKT.20.12.24.04

Aircraft Serious Incident Investigation Report

Global Aviation Flying School

Cessna 172; PK-TGW

Budiarto Airport, Curug

Republic of Indonesia

18 December 2020

2021

This Final Report was produced by the Komite Nasional Keselamatan Transportasi (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, 12 November 2021
**KOMITE NASIONAL
KESELAMATAN TRANSPORTASI
CHAIRMAN**


SOERJANTO TJAHOJONO

1 FACTUAL INFORMATION

On 18 December 2020, a Cessna 172 aircraft, registered PK-TGW, was being operated by Global Aviation Flying School on circuit local flight training at Budiarto Airport (WIRR), Curug, Tangerang¹. On board of the aircraft was one instructor and one student pilot. The flight was planned for first solo check flight.

The aircraft was not equipped with any flight recorder and the radio communication was not recorded therefore, the investigation was based on the data collected on the occurrence site and the interview with the instructor and the student pilot.

About 0030 UTC² (0730 LT), the student pilot attended morning briefing by the instructor, prior to perform first solo check at Global Flying School flight operation office.

About 0800 LT, the student pilot and the instructor performed check flight for first solo and conducted 4 touch and go exercises. After completed the first solo check flight, the instructor released the student pilot for first solo flight. The instructor instructed the student to conduct one circuit only for the first solo flight.

About 0920 LT, the student pilot requested start up clearance to the Budiarto Ground Controller for first solo circuit flight.

After the engine started, the student pilot requested taxi clearance. About 0933 LT, PK-TGW took off from Runway 30.

At 0939 LT, the Budiarto Tower Controller issued clearance for touch and go to the student pilot. PK-TGW conducted touch and go.

At 0943 LT, the student pilot reported to Budiarto Tower Controller that the position was on downwind.

At 0946 LT, the student pilot reported position was on final and the Budiarto Tower Controller issued the landing clearance and informed that the wind was calm.

The student pilot felt that the approach was normal and uneventful. After touchdown the student pilot found that the aircraft tend to turn to the left and was hard to control to maintain the runway centerline. The aircraft continued move to the left and stopped on a ditch on the left of the runway 30, approximately 80 meters from runway centerline and 435 meters from beginning of runway.

No one injured in this occurrence.

¹ Budiarto Airport (WIRR), Curug, Tangerang will be named as Budiarto for the purpose of this report

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.

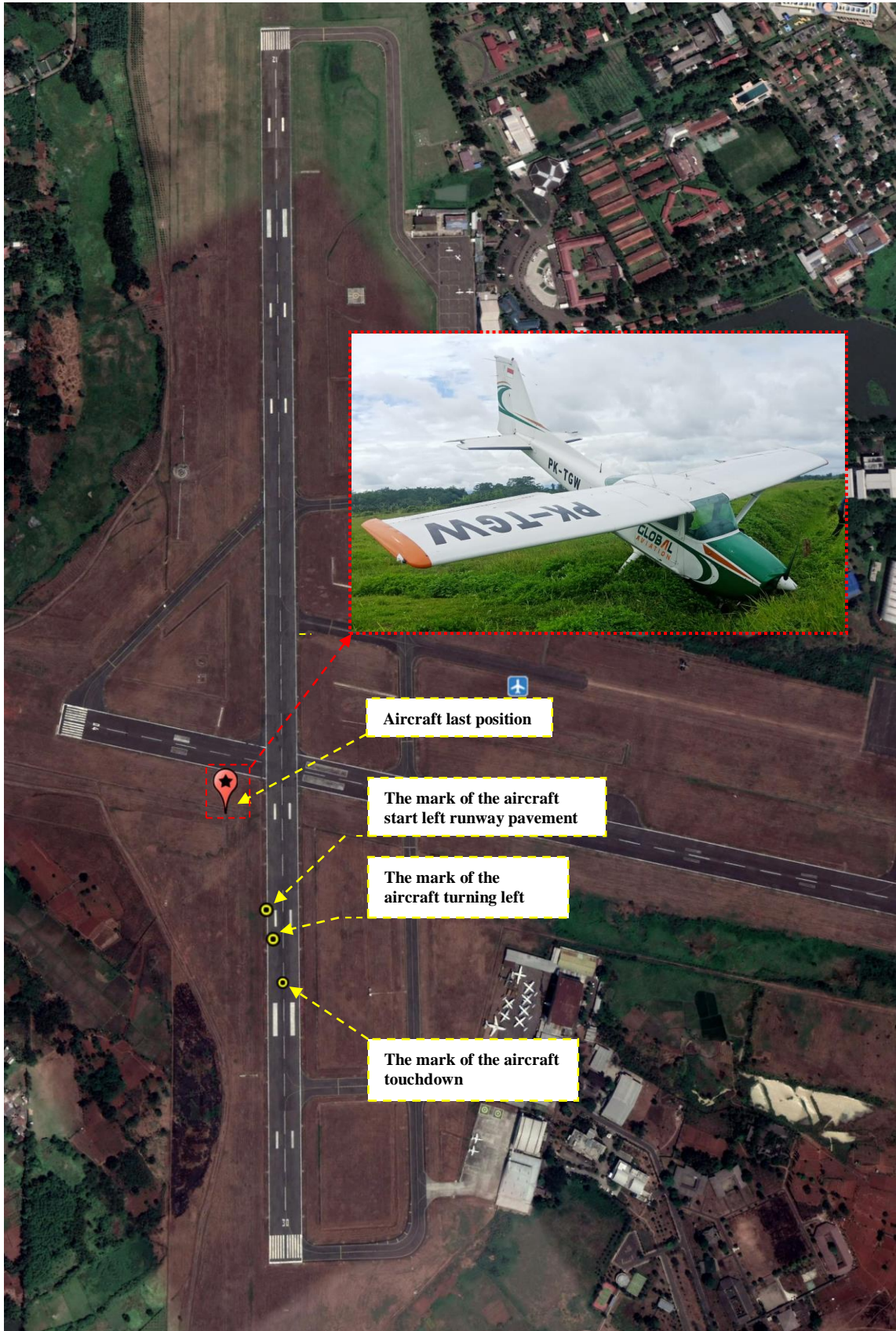


Figure 1: The marks found on the runway indicated the aircraft movement

The aircraft had minor damaged detail of the damage is as follow:

- a. The propeller tips scratched;
- b. Transponder antenna on the lower body broken.



Figure 2: The aircraft last position



Figure 3: Damage on propeller blade



Figure 4: Damage on transponder antenna

The student pilot was 20 years old, join to the flying school on 15 September 2020 and held the valid Student Pilot License. The student pilot held second class medical certificate which valid up to September 2021. The student pilot accumulated 17.50 hours on Cessna 172 aircraft.

After landing roll as described in the Airplane Flying Handbook (FAA-H-8083-3B) chapter 8, described as follow:

After-Landing Roll

The landing process must never be considered complete until the airplane decelerates to the normal taxi speed during the landing roll or has been brought to a complete stop when clear of the landing area. Numerous accidents occur as a result of pilots abandoning their vigilance and failing to maintain positive control after getting the airplane on the ground.

A pilot must be alert for directional control difficulties immediately upon and after touchdown due to the ground friction on the wheels. Loss of directional control may lead to an aggravated, uncontrolled, tight turn on the ground, or a ground loop. The combination of centrifugal force acting on the center of gravity (CG) and ground friction of the main wheels resisting it during the ground loop may cause the airplane to tip or lean enough for the outside wingtip to contact the ground. This imposes a sideward force that could collapse the landing gear.

The rudder serves the same purpose on the ground as it does in the air—it controls the yawing of the airplane. The effectiveness of the rudder is dependent on the airflow, which depends on the speed of the airplane. As the speed decreases and the nose wheel has been lowered to the ground, the steerable nose provides more positive directional control.

The brakes of an airplane serve the same primary purpose as the brakes of an automobile—to reduce speed on the ground. In airplanes, they are also used as an aid in directional control when more positive control is required than could be obtained with rudder or nose wheel steering alone.

To use brakes, on an airplane equipped with toe brakes, the pilot slides the toes or feet up from the rudder pedals to the brake pedals. If rudder pressure is being held at the time braking action is needed, that pressure is not to be released as the feet or toes are being slid up to the brake pedals because control may be lost before brakes can be applied.

Putting maximum weight on the wheels after touchdown is an important factor in obtaining optimum braking performance. During the early part of rollout, some lift continues to be generated by the wing. After touchdown, the nose wheel is lowered to the runway to maintain directional control. During deceleration, the nose may pitch down by braking and the weight transferred to the nose wheel from the main wheels. This does not aid in braking action, so back pressure is applied to the controls without lifting the nose wheel off the runway. This enables directional control while keeping weight on the main wheels.

Careful application of the brakes is initiated after the nose wheel is on the ground and directional control is established. Maximum brake effectiveness is just short of the point where skidding occurs. If the brakes are applied so hard that skidding takes place, braking becomes ineffective. Skidding is stopped by releasing the brake pressure. Braking effectiveness is not enhanced by alternately applying, releasing, and reapplying brake pressure. The brakes are applied firmly and smoothly as necessary.

During the ground roll, the airplane's direction of movement can be changed by carefully applying pressure on one brake or uneven pressures on each brake in the desired direction. Caution must be exercised when applying brakes to avoid overcontrolling.

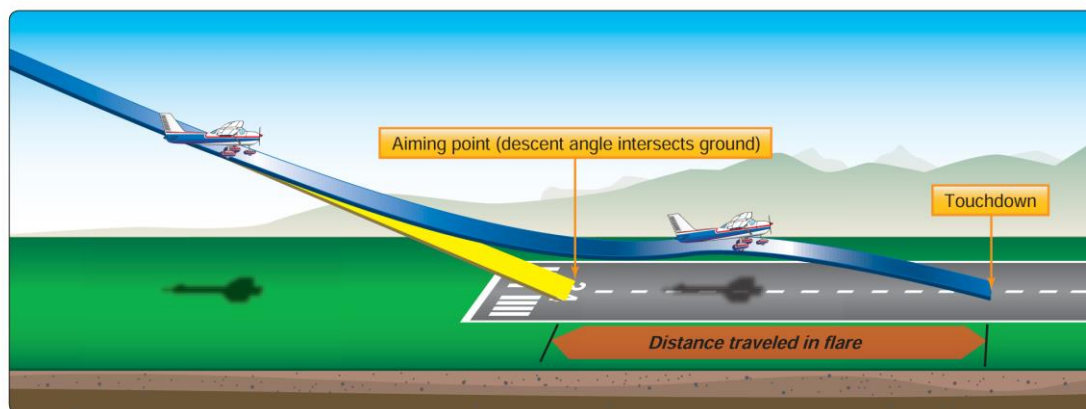


Figure 8-9. Stabilized approach.

The ailerons serve the same purpose on the ground as they do in the air—they change the lift and drag components of the wings. During the after-landing roll, they are used to keep the wings level in much the same way they are used in flight. If a wing starts to rise, aileron control is applied toward that wing to lower it. The amount required depends on speed because as the forward speed of the airplane decreases, the ailerons become less effective. Procedures for using ailerons in crosswind conditions are

explained further in this chapter, in the Crosswind Approach and Landing section.

After the airplane is on the ground, back-elevator pressure is gradually relaxed to place weight on the nose wheel to aid in better steering. If available runway permits, the speed of the airplane is allowed to dissipate in a normal manner. Once the airplane has slowed sufficiently and has turned on to the taxiway and stopped, retract the flaps and perform the after landing checklist. Many accidents have occurred as a result of the pilot unintentionally operating the landing gear control and retracting the gear instead of the flap control when the airplane was still rolling. The habit of positively identifying both of these controls, before actuating them, must be formed from the very beginning of flight training and continued in all future flying activities.

2 SAFETY MESSAGE

- Careful application of the brakes is initiated after the nose wheel is on the ground and directional control is established. Maximum brakes effectiveness is just short of the point where skidding occurs. If the brakes are applied so hard that skidding takes place, braking becomes ineffective. Skidding is stopped by releasing the brake pressure. Braking effectiveness is not enhanced by alternately applying, releasing and reapplying brake pressure. The brakes are applied firmly and smoothly as necessary.

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After-Landing Roll (Airplane Flying Handbook (FAA-H-8083-3B) Chapter 8-8.

- During the after-landing roll, while maintaining airplane track over runway centreline with ailerons and heading down runway with rudder pedals, the airplane should be gradually slowed to normal taxi speed with normal brake pressure before turning off of the landing runway. Any significant degree of turn at faster speeds could result in subsequent damage to the landing gear, tires, brakes, or the airplane structure.

To give full attention to controlling the airplane during the landing roll, the after-landing checklist should be performed only after the airplane is brought to a complete stop beyond the runway holding position markings. There have been many cases where a pilot has mistakenly manipulated the wrong handle and retracted the landing gear, instead of the flaps, due to improper division of attention while the airplane was moving. However, this procedure may be modified if the manufacturer recommends that specific after-landing items be accomplished during landing rollout. For example, when performing a short-field landing, the manufacturer may recommend retracting the flaps on rollout to improve braking. In this situation, the pilot should make a positive identification of the flap control handle before retracting the flaps.

After-Landing (Airplane Flying Handbook (FAA-H-8083-3B) Chapter 2-18.

Further reading is available at

https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/airplane_handbook/media/airplane_flying_handbook.pdf

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