

COMANDO DA AERONÁUTICA
CENTRO DE INVESTIGAÇÃO E PREVENÇÃO DE
ACIDENTES AERONÁUTICOS



FINAL REPORT
A-071/CENIPA/2022

OCCURRENCE:	ACCIDENT
AIRCRAFT:	PT-JUM
MODEL:	182P
DATE:	15JUN2022



NOTICE

According to the Law nº 7565, dated 19 December 1986, the Aeronautical Accident Investigation and Prevention System – SIPAER – is responsible for the planning, guidance, coordination, and execution of the activities of investigation and prevention of aeronautical accidents.

The elaboration of this Final Report was conducted considering the contributing factors and hypotheses raised. The report is, therefore, a technical document which reflects the result obtained by SIPAER regarding the circumstances that contributed or may have contributed to triggering this occurrence.

The document does not focus on quantifying the degree of contribution of the distinct factors, including the individual, psychosocial or organizational variables that conditioned the human performance and interacted to create a scenario favorable to the accident.

The exclusive objective of this work is to recommend the study and the adoption of provisions of preventative nature, and the decision as to whether they should be applied belongs to the President, Director, Chief or the one corresponding to the highest level in the hierarchy of the organization to which they are being forwarded.

This Final Report has been made available to the ANAC and the DECEA so that the technical-scientific analyses of this investigation can be used as a source of data and information, aiming at identifying hazards and assessing risks, as set forth in the Brazilian Program for Civil Aviation Operational Safety (PSO-BR).

This Report does not resort to any proof production procedure for the determination of civil or criminal liability, and is in accordance with Appendix 2, Annex 13 to the 1944 Chicago Convention, which was incorporated in the Brazilian legal system by virtue of the Decree nº 21713, dated 27 August 1946.

Thus, it is worth highlighting the importance of protecting the persons who provide information regarding an aeronautical accident. The utilization of this report for punitive purposes maculates the principle of “non-self-incrimination” derived from the “right to remain silent” sheltered by the Federal Constitution.

Consequently, the use of this report for any purpose other than that of preventing future accidents, may induce to erroneous interpretations and conclusions.

N.B.: This English version of the report has been written and published by the CENIPA with the intention of making it easier to be read by English speaking people. Considering the nuances of a foreign language, no matter how accurate this translation may be, readers are advised that the original Portuguese version is the work of reference.

SYNOPSIS

This is the Final Report of the June 15, 2022, accident involving the 182P Cessna aircraft of registration marks PT-JUM. The occurrence was typified as “[ARC] Abnormal runway contact.”

According to accounts, the aircraft was transporting cargo to the *Estrela do Norte* mining site in the municipality of *Itaituba*, State of *Pará*.

While landing on an unregistered airstrip at the mining site, the aircraft flipped over forward and sustained substantial damage.

The pilot suffered fatal injuries.

Being the United States of America the State of aircraft design, the NTSB (National Transportation Safety Board) designated an Accredited Representative for participation in the investigation of the accident.

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GLOSSARY OF TECHNICAL TERMS AND ABBREVIATIONS

ANAC	Brazil's National Civil Aviation Agency
CENIPA	Brazil's Center for the Investigation and Prevention of Aeronautical Accidents
CIV	Digital Pilot-Logbook
CMA	Aeronautical Medical Certificate
CVA	Certificate of Airworthiness
FAP	Pilot's Evaluation Form
MLTE	Multi-Engine Landplane Class Rating
MNTE	Single-Engine Landplane Class Rating
NTSB	National Transportation Safety Board
PCM	Commercial Pilot License - Airplane
PIC	Pilot in Command
PPR	Private Pilot License – Airplane
PN	Part Number
RBAC	Brazilian Civil Aviation Regulation
SACI	Integrated Civil Aviation Information System
SIPAER	Aeronautical Accidents Investigation and Prevention System
SJ27	ICAO location designator – <i>Carolina Aerodrome, Itaituba, Pará</i>
SN	Serial Number
TPP	Private Air Services Aircraft Registration Category
TSN	Time Since New
TSO	Time Since Overhaul
UTC	Coordinated Universal Time

1. FACTUAL INFORMATION.

Aircraft	Model: 182P	Operator: Private.
	Registration: PT-JUM	
Occurrence	Manufacturer: Cessna Aircraft.	Type(s): [ARC] Abnormal runway contact
	Date/time: 15JUN2022 - 15:30 (UTC)	
Occurrence	Location: Estrela do Norte mining site.	
	Lat. 05°18'50"S Long. 057°39'33"W	
	Municipality – State: Itaituba – Pará.	

1.1. History of the flight.

At an undetermined time, the aircraft departed from SJ27 (*Carolina* Aerodrome, *Itaituba*, Pará) bound for the unregistered airstrip of the *Estrela do Norte* mining site, *Itaituba*, Pará, on a cargo transport flight with 01 POB (pilot).

During the landing roll, the aircraft tipped over and overturned. (Figure 1).

The aircraft sustained substantial damage, and the sole occupant suffered fatal injuries.



Figure 1 - Side view of the aircraft after the accident, and the cargo it was transporting.

1.2. Injuries to persons.

Injuries	Crew	Passengers	Others
Fatal	1	-	-
Serious	-	-	-
Minor	-	-	-
None	-	-	-

1.3. Damage to the aircraft.

It was not possible to determine the extent of the damage to the aircraft, as reaching the accident site was unfeasible due to its difficult access. Additionally, there were no guarantees that the aircraft would remain at the crash site after the occurrence.

It is noteworthy that, according to reports from another pilot who visited the site, there was substantial damage to the nose landing gear of the accident aircraft.

1.4. Other damage.

NIL.

1.5. Personnel information.

1.5.1. Crew's flight experience.

Hours Flown	
	PIC
Total	01:06
Total in the last 30 days	Unknown
Total in the last 24 hours	Unknown
In this type of aircraft	Unknown
In this type in the last 30 days	Unknown
In this type in the last 24 hours	Unknown

RMK: data regarding the Pilot-in-Command's (PIC) flight hours obtained from the CIV (digital Pilot-Logbook) of the ANAC's SACI (Integrated Civil Aviation Information System). The records of the referred CIV were out of date.

The only recorded flight time was 1 hour and 6 minutes in a twin-engine aircraft on June 23, 2021, for the revalidation of the MLTE class rating.

It was not possible to estimate the pilot's total flight hours due to the lack of aircraft documentation and other formal records.

1.5.2. Personnel training.

It was not possible to gather information regarding the PIC's training school.

1.5.3. Category of licenses and validity of certificates.

The PIC held a valid Commercial Pilot License - Airplane (CPL) and valid ratings for Single-Engine Landplane (MNT) and Multi-Engine Landplane (MLTE).

1.5.4. Qualification and flight experience.

A Pilot Evaluation Form (FAP) dated June 23, 2021, confirmed that the PIC met training requirements and had passed a proficiency exam.

However, it was not possible to obtain evidence of recent experience to determine whether the pilot was qualified to perform the flight.

According to accounts, the PIC had experience with this type of flight.

1.5.5. Validity of medical certificate.

The PIC held a valid CMA (Aeronautical Medical Certificate).

1.6. Aircraft information.

The SN 18263242 model 182P aircraft was a product manufactured by Cessna Aircraft in 1974 and registered in the Private Air Service Aircraft Registration Category (TPP).

The airplane's Certificate of Airworthiness (CVA) was valid.

The owner/operator of the aircraft did not provide the airframe, engine, and propeller logbooks, making it impossible to confirm whether the logbook records were up to date.

The owner/operator also did not present the aircraft logbook, preventing the determination of total flight hours, hours flown since the last overhaul and inspections, as well as the airframe, engine, and propeller hours at the time of the accident.

The Weight and Balance Sheet was not provided either, making it unfeasible to determine whether the aircraft was operating within its weight and balance limits. It is worth

noting that, according to reports, the aircraft carried a load of food supplies during the accident flight.

However, by means of the ANAC's SACI system, one was able to verify the records of the aircraft's latest inspection, a "200H" type, and the issuance of the CVA, dated January 26, 2022. The inspection was performed on the premises of a certified maintenance organization.

On that occasion, the aircraft had a total of 5,349 hours, and its engine (PN O-470-R, SN 466662) had 2,665 hours of Time Since New (TSN) and 195 hours of Time Since Overhaul (TSO).

The engine listed on the Component Control Sheet of the last CVA underwent overhaul on June 20, 2012. However, one could not confirm whether this component was still equipping the PT-JUM airplane at the time of the accident.

It is important to highlight that the owner/operator listed in the police report differed from the owner recorded in the Certificate of Registration. Additionally, the Investigation Committee did not succeed contacting the owner listed in the Certificate.

1.7. Meteorological information.

According to accounts from another pilot who visited the crash site minutes after the accident, the weather conditions were favorable for visual flights, with no significant cloud cover or other restrictions to visibility.

However, there were reports of heavy rainfall in the days leading up to the accident.

1.8. Aids to navigation.

NIL.

1.9. Communications.

NIL.

1.10. Aerodrome information.

The occurrence took place at the unregistered airstrip of the *Estrela do Norte* mining site, in the municipality of *Itaituba*, State of *Pará*, which reportedly had potholes and a waterlogged (muddy) surface, as described by the pilot who visited the crash site.

According to information, the airstrip dated back to the 1980s. It had been abandoned for a long time, before being reactivated for the mining operations weeks prior to the accident.

It was reported that, during the reactivation, the airstrip underwent maintenance, which included removal of trees and filling of potholes caused by the tree roots.

According to this report, on the approach path for landing (heading 350°), the first 100 meters of the runway were level, followed by a 150-meter uphill slope. The runway was approximately 40 meters wide (Figures 2 and 3).



Figure 2 - View of the aircraft and of the runway in the direction of landing.



Figure 3 - View of the aircraft and of the runway in the direction opposite to landing.

1.11. Flight recorders.

Not required and not installed.

1.12. Wreckage and impact information.

According to reports, the PT-JUM airplane was found in one piece, with flaps fully extended, showing damage to the nose landing gear and to the tips of the propeller blades.

According to information, the cargo being transported was found on top of the pilot inside the cockpit.

1.13. Medical and pathological information.

1.13.1. Medical aspects.

NIL.

1.13.2. Ergonomic information.

NIL.

1.13.3. Psychological aspects.

During the investigation, several attempts were made to contact the PIC's family to gather information about any psychological factors that could have affected the pilot's performance; however, such efforts were unsuccessful.

Thus, no evidence was found that issues of psychological nature might have contributed to the accident.

1.14. Fire.

NIL.

1.15. Survival aspects.

The PIC did not survive the accident.

It is worth noting that, according to observers who were at the site shortly after the occurrence, the cargo of food supplies (meat) transported inside the aircraft was found on top of the pilot.

1.16. Tests and research.

NIL.

1.17. Organizational and management information.

NIL.

1.18. Operational information.

Data obtained during the investigation indicated that the PIC frequently operated on unregistered airstrips at the mining sites of the region.

According to reports, the accident flight was the first of the day, intended to transport cargo to the unregistered airstrips of the *Estrela do Norte* (05°18'44.1"S 057°39'35.7"W) and *Santa Rosa* (05°22'46.5"S 057°39'01.9"W) mining sites, both located in the municipality of *Itaituba*, State of *Pará*.

Regarding this matter, Section 91.102(d) "General Rules" of Subpart B "Flight Rules" of the Brazilian Civil Aviation Regulation nº 91 (RBAC-91) "General Operating Requirements for Civil Aircraft," Amendment nº 03, dated June 27, 2021, which was valid at the time of the accident, read the following:

91.102 General Rules

[...]

(d) the use of an aerodrome is only permitted if it is registered and the operator determines that it is suitable for the type of aircraft involved and the proposed operation.

After landing, the aircraft nosed over and eventually flipped onto its back.

It was also reported that the cargo transported consisted of food supplies, including approximately 150 kg of meat, which appeared not to have been properly secured inside the cabin.

Thus, the lack of precise information, documentation, and formal records about the aircraft's loading for the accident flight made it impossible to determine whether the airplane was operating within weight and balance limits. Therefore, it was not possible to confirm whether this aspect contributed to the flip over.

1.19. Additional information.

NIL.

1.20. Useful or effective investigation techniques.

NIL.

2. ANALYSIS.

It was a private cargo transportation flight with 01 POB (pilot).

Although the PT-JUM's Certificate of Airworthiness (CVA) was valid, it was not possible to determine whether the airplane was airworthy at the time of the occurrence or if it had any discrepancies prior to the accident, due to the lack of cooperation on the part of the owner/operator in providing the aircraft's records.

The aircraft departed from SJ27 bound for the unregistered airstrip of the *Estrela do Norte* mining site.

Operating on an unregistered airstrip was not in accordance with the provisions of the RBAC-91 (Section 91.102(d) of Subpart B, Amendment nº 03, dated June 27, 2021).

According to an eyewitness' account, the destination airstrip had not been in use for a long time, and was reactivated weeks before the accident.

However, in accordance with information obtained, the physical conditions of the airstrip on the day of the accident were not suitable for safe operation, as it contained potholes and mud resulting from heavy rains in the previous days.

Interviews also revealed that, after the accident, the airplane, with flaps fully extended, showed substantial damage to the nose landing gear and to the tips of the propeller blades.

Based on the reported dynamics of the aircraft flip over forward and the substantial damage to the nose landing gear, one raised the hypothesis that, during landing, the aircraft came across a pothole or a muddy area, which caused it to flip over.

The transported cargo was thrown forward inside the aircraft during the overturn and was found on top of the pilot, suggesting it had not been properly secured, and ended up shifting and striking the pilot.

Thus, operating in violation of the applicable aviation regulations may result in safety levels below the minimums acceptable and established by the Brazilian State.

The minimum safety levels are ensured through compliance with the Brazilian Civil Aviation Regulations. Failure to observe these minimum safety levels may create unsafe latent conditions whose suppression or mitigation is achieved through adherence to the very regulations.

3. CONCLUSIONS.**3.1. Findings.**

- a) the PIC held a valid Medical Certificate (CMA);
- b) the PIC held valid Single-Engine Landplane (MNTE) and Multi-Engine Landplane (MLTE) ratings;
- c) the PIC's CIV (digital Pilot-Logbook) was out of date;
- d) it was not possible to determine whether the PIC was qualified, but it was reported that he had experience with the type of flight;
- e) the aircraft had a valid Certificate of Airworthiness (CVA);

- f) the aircraft's documentation and logbook were not made available by the owner/operator;
- g) it was not possible to verify whether the aircraft was operating within weight and balance limits;
- h) it was not possible to confirm whether the records of the airframe, engine, and propeller logbooks were up to date;
- i) the total hours flown by the aircraft from the obtainment of its latest CVA to the time of the accident could not be determined, making it impossible to confirm its airworthiness condition;
- j) reports indicated that the weather conditions were consistent with the flight;
- k) the aircraft landed on the unregistered airstrip of the *Estrela do Norte* mining site;
- l) during the landing roll, the aircraft flipped over forward;
- m) according to reports, the cargo was found on top of the pilot inside the cockpit;
- n) reports indicated the airstrip had mud and potholes;
- o) the aircraft was reportedly transporting approximately 150 kg of food supplies;
- p) the aircraft owner identified in the police report differed from the owner listed in the Certificate of Registration;
- q) the aircraft sustained substantial damage; and
- r) the PIC suffered fatal injuries.

3.2. Contributing factors.

- Attitude – a contributor.

The use of an unregistered airstrip in degraded conditions led to a risk situation exceeding the minimum acceptable levels and demonstrated improvisation and noncompliance with operations and procedures.

4. SAFETY RECOMMENDATIONS

None.

5. CORRECTIVE OR PREVENTATIVE ACTION ALREADY TAKEN.

None.

On April 25th, 2025.