

COMANDO DA AERONÁUTICA
CENTRO DE INVESTIGAÇÃO E PREVENÇÃO DE
ACIDENTES AERONÁUTICOS



FINAL REPORT
A - 129/CENIPA/2021

OCCURRENCE:	ACCIDENT
AIRCRAFT:	PT-DQU
MODEL:	PA-31
DATE:	19NOV2021



NOTICE

According to 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 investigation and prevention activities of aeronautical accidents.

The elaboration of this Final Report was conducted by taking into account the contributing factors and hypotheses raised. Therefore, the report is a technical document reflecting 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 different 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 under Appendix 2, Annex 13 to the 1944 Chicago Convention, which was incorporated into the Brazilian legal system by 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, using this report for any purpose other than preventing future accidents may induce 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. Taking into account 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 19NOV2021 accident with the PA-31 aircraft model, registration PT-DQU. The accident was classified as “[FUEL] Fuel and [RE] – Runway Excursion I Fuel Starvation”.

During the run after landing, the aircraft traveled the entire runway length and passed its longitudinal end (overrun), stopping about 10 m after the opposite threshold.

The aircraft had substantial damage.

The conductor and the pilot left unharmed.

An Accredited Representative of the National Transportation Safety Board (NTSB) - USA, (State where the aircraft was manufactured/designed) was designated for participation in the investigation.



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GLOSSARY OF TECHNICAL TERMS AND ABBREVIATIONS

ANAC	Brazil's National Civil Aviation Agency
CA	Airworthiness Certificate
CENIPA	Aeronautical Accident Investigation and Prevention Center
CMA	Aeronautical Medical Certificate
COMAER	Aeronautics Command
CVA	Airworthiness Verification Certificate
DECEA	Airspace Control Department
FUNAI	National Indian Foundation
ICA	Aeronautics Command Instruction
IFR	Instrument Flight Rules
IMC	Instrument Meteorological Conditions
MNTE	Airplane Single Engine Land Rating
MLTE	Airplane Multi Engine Land Rating
NTSB	National Transportation Safety Board (USA)
OM	Maintenance Organization
PIC	Pilot in Command
PPR	Private Pilot License – Airplane
RBAC	Brazilian Civil Aviation Regulation
REDEMET	Aeronautics Command Meteorology Network
SACI	Integrated Civil Aviation Information System
SBOJ	ICAO Location Designator – Crepurizão Aerodrome, Itaituba - PA
SERIPA VII	Seventh Regional Aeronautical Accident Investigation and Prevention Service
SIPAER	Aeronautical Accident Investigation and Prevention System
SJLJ	ICAO Location Designator – Jatapuzinho Aerodrome, Caroebe - RR
TPP	Private Air Service aircraft registration category
UTC	Universal Time Coordinated
VFR	Visual Flight Rules
VMC	Visual Meteorological Conditions
ZIDA	Air Defense Identification Zone

1. FACTUAL INFORMATION.

Aircraft	Model: PT-31	Operator: Private
	Registration: PT-DQU	
Occurrence	Manufacturer: Piper Aircraft	Type(s): “[FUEL] Fuel and [RE] – Runway Excursion” Subtype(s): Fuel Starvation
	Date/time: 19NOV2021 - 1915 UTC	
	Location: Jatapuzinho Aerodrome (SJLJ)	
	Lat. 00°35'50" Long. 059°13'18"W Municipality – State: Caroebe – RR	

1.1 History of the flight.

The aircraft took off from the Crepurizão (SBOJ) Aerodrome, Itaituba - PA, at approximately 14:00 (UTC) to perform a private flight with an unknown destination and purpose. There were a conductor who, according to reports, was operating the aircraft at the time of the occurrence but did not have a pilot's license and a pilot on board.

After approximately 5 hours of flight, a failure occurred in the right engine and then in the left engine, forcing the aircraft to make an emergency landing at the Jatapuzinho (SJLJ) Aerodrome, Caroebe - RR.

During the run after landing, the aircraft traveled the entire runway length and overran its longitudinal edge (overrun), stopping about 10 m after the opposite threshold.



Figure 1 - View of the PT-DQU at the emergency landing site.

The aircraft had substantial damage.

The conductor and pilot left unharmed.

1.2 Injuries to persons.

Injuries	Crew	Passengers	Others
Fatal	-	-	-
Serious	-	-	-
Minor	-	-	-
None	2	-	-

1.3 Damage to the aircraft.

The aircraft had substantial damage. There was breakage of the auxiliary landing gear and damage to the fuselage, propeller assemblies, and engines.

1.4 Other damage.

None.

1.5 Personnel information.**1.5.1 Crew's flight experience.**

Flight Hours		
	Conductor	Pilot
Total	Unknown	45:25
Total in the last 30 days	Unknown	11:05
Total in the last 24 hours	Unknown	00:00
In this type of aircraft	Unknown	00:00
In this type in the last 30 days	Unknown	00:00
In this type in the last 24 hours	Unknown	00:00

N.B.: The conductor and the pilot were not located. The information regarding the pilot's flight experience was extracted from the Digital CIV.

1.5.2 Personnel training.

The probable aircraft conductor was Paraguayan and did not present any documentation proving he had pilot training.

As stated in the ANAC's SACI, the pilot took the PPR course at the Dourados Aeroclub – MS, in 2021.

1.5.3 Category of licenses and validity of certificates.

The occupants of the PT-DQU were not located, which made it impossible to gather the information.

There was no record in the ANAC that, at the time of the occurrence, the likely aircraft conductor had any license or qualification to operate an aircraft in Brazil.

The pilot had a PPR License and a valid MNTE Rating.

1.5.4 Qualification and flight experience.

The pilot on board was considered the PIC in this occurrence, being responsible for the operation and safety of the flight, as established in section 91.3 of the RBAC No. 91, Amendment 03, in force at the time of the occurrence.

The likely conductor was not qualified to operate the plane.

The pilot had no experience and was not qualified to operate the PT-DQU, which belonged to the MLTE Class.

In this regard, section 61.3 - "Conditions relating to the use of licenses, certificates, ratings and authorizations" of the RBAC No. 61 - "Licenses, Ratings, and Certificates for Pilots" Amendment No. 13, in force on the date of the accident, recorded:

- (a) Pilot's license/certificate and ratings: only a person who holds a valid pilot's license/certificate with valid ratings, issued under these Regulations and appropriate to the aircraft operated, the operation performed, and the function performed on board may act as pilot or copilot aboard civil aircraft registered in Brazil.

Section 91.5 - "Crew Requirements" of the RBAC No. 91 - "General Operating Requirements for Civil Aircraft" Amendment No. 03, in force on the date of the accident, established that:

- (a) The operation of a civil aircraft registered in Brazil is permitted only if:

(1) the flight crew complies with the aircraft's minimum crew as set out in its airworthiness certificate;

(2) the operator designates a pilot to act as pilot-in-command; and

(3) the operation is carried out by crewmembers properly licensed/certified and qualified for the aircraft according to the RBAC nº 61 or the RBHA nº 63, or the RBAC that may replace it, for the role they perform on board, with recent experience, and holders of valid CMA, issued under the RBAC nº 67.

[...]

1.5.5 Validity of medical certificate.

The possible conductor did not have a CMA.

The pilot had a valid CMA.

1.6 Aircraft information.

The aircraft, model PA-31, Serial Number (SN) 31640, was manufactured by Piper Aircraft in 1970 and was registered in the TPP category.

The CVA was valid.

The last inspection, the "1,000 hours" type, was performed on 28JUL2021 by the OM RPM Manutenção em Aeronaves, in Luziânia - GO, being with 5,914 hours and 15 minutes flown after the inspection.

The airframe, engine, and propeller logbook records were not presented.

1.7 Meteorological information.

According to the information extracted from the REDEMET, it was found that at the time the flight happened, there were significant meteorological formations on the probable route of the PT-DQU, as can be seen in the constant Enhanced Satellite Image in Figure 2.

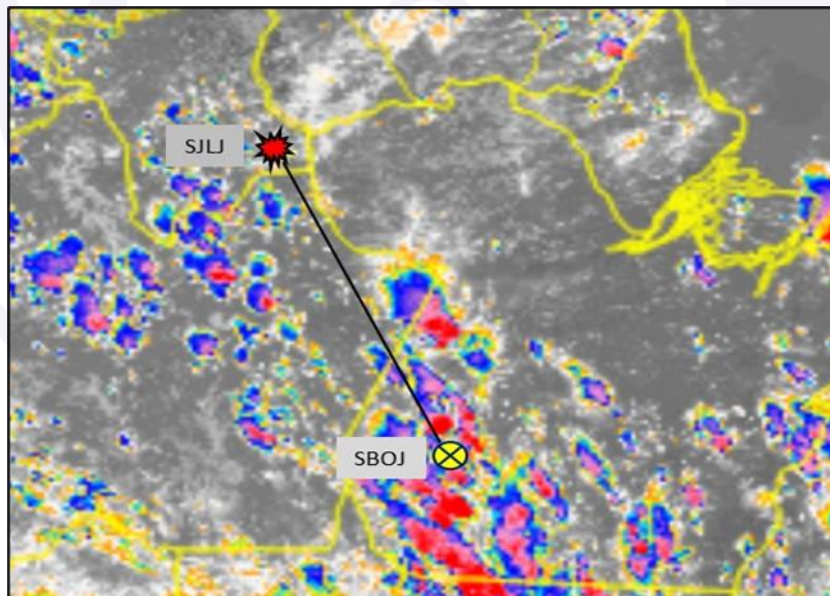


Figure 2 - Enhanced Satellite Image at 1850 (UTC). Source: Adapted REDEMET.

The image above corroborates the information provided by the operator that the crew encountered adverse weather conditions en route.

1.8 Aids to navigation.

Nil.

1.9 Communications.

Nil.

1.10 Aerodrome information.

The Jatapuzinho Aerodrome (SJLJ) was private, operated by the National Indian Foundation (FUNAI), and operated under VFR, during the day.

The runway was made of dirt, with thresholds 11/29, declared dimensions of 700 x 30 m and an elevation of 397 ft.

According to third-party information, at the time of the occurrence, the runway had 400 m available for takeoff and landing.

1.11 Flight recorders.

Neither required nor installed.

1.12 Wreckage and impact information.

The landing was performed at threshold 11. However, during the run after landing, the auxiliary landing gear broke. The aircraft covered the entire available distance and overshot the aft limit, stopping in a planting area about 10 m after threshold 29 and had substantial damage.

After the complete stop, the aircraft was abandoned through the main door.



Figure 3 - Sketch of the landing at SJLJ Aerodrome. Source: Adapted from Google Maps.

1.13 Medical and pathological information.

1.13.1 Medical aspects.

Nil.

1.13.2 Ergonomic information.

Nil.

1.13.3 Psychological aspects.

Nil.

1.14 Fire.

There was no fire.

1.15 Survival aspects.

The conductor and the pilot abandoned the aircraft, by their own means, through the main door.

1.16 Tests and research.

Nil.

1.17 Organizational and management information.

Nil.

1.18 Operational information.

According to information passed by third parties to the Investigation Team, the flight originated from the SBOJ Aerodrome, located in the municipality of Itaituba - PA and was destined for an unknown Aerodrome in Guyana.

It was reported that the aircraft was being transferred to Guyana, where it was operated by a mining company supposedly based near the city of Georgetown, the country's capital.

With approximately 5 hours of flight, after taking a detour from meteorological formations, a failure occurred in the right engine and then in the left one, forcing the aircraft to make an emergency landing at the Jatapuzinho (SJLJ) Aerodrome, Caroebe - RR.

After landing, the aircraft did not stop within the runway limits and overshot its longitudinal edge (overrun), stopping about 10 meters after the opposite threshold.

- a) under Instrument Flight Rules;
- b) under Visual Flight Rules, if subject to Air Traffic Control Service;
- c) at an aerodrome with an ATS unit;
- (d) in a particular airspace or Aerodrome, where such display is required in accordance with aeronautical publications; or
- e) in an Air Defense Identification Zone (ZIDA).

The Air Defense Identification Zone was airspace of special designation and defined dimensions, within which the aircraft had to satisfy special identification and notification procedures, in addition to those related to the provision of air traffic services, for Air Defense purposes.

The Continental ZIDA corresponded to the 80 NM strip from the national land border.

Due to the lack of precise information about the fuel, it was not possible to make the calculations concerning the autonomy, the range and the weight and balance of the aircraft.

It was not possible to confirm whether the flight was conducted in IMC Conditions or VMC Conditions.

1.19 Additional information.

At the time of writing this Final Report, the SJLJ Aerodrome was closed due to the failure to submit the Basic Plan for the Aerodrome Protection Zone, except for aircraft operating on an emergency and precarious basis in the interest of serving indigenous peoples, and only by entities in the interests of the public service.

1.20 Useful or effective investigation techniques.

Nil.

2. ANALYSIS.

It was a private flight, originating from the Crepurizão (SBOJ) Aerodrome in Itaituba - PA, with an alleged destination in the territory of Guyana.

The occupants of the aircraft were not located, making it difficult to accurately gather all the information necessary to identify the contributing factors of this occurrence.

It was reported that the aircraft was being transferred to Guyana, where it was operated by a mining company supposedly based near the capital, Georgetown.

However, it was found that there was no presentation of the respective Flight Plan for that operation, contrary to what was recommended by item 2.3 - "Mandatory Presentation", of the ICA 100-11 - "Flight Plan".

The aircraft had a valid CVA, but the airframe, engines, and propeller logbooks were not presented, and it was not possible to verify if they were updated.

The supposed conductor of the PT-DQU, who was Paraguayan, was not located and did not present any documentation to prove his training, qualification, and CMA.

There was no record at the ANAC that the possible aircraft conductor, at the time of the accident, had any license or qualification to operate aircraft in Brazil.

As for the pilot, it was verified that his CMA was valid, but he only had a valid MNTE. The operation of this aircraft model would require an MLTE Rating.

For this reason, it was found that both the pilot and the conductor were not qualified and did not have the experience to perform the flight, contrary to the provisions of section 91.5 of the RBAC No. 91, in force on the date of the accident.

According to the Enhanced Satellite Image extracted from the REDEMET, it was observed that, at the time the flight occurred, there were significant weather formations on the probable route of PT-DQU.

Probably, due to the weather conditions found en route, detours were executed to maintain the VMC flight. This may have impacted the duration of the planned leg, causing an increase in flight time, with direct impact on the airplane's range.

Thus, when they realized that it would not be possible to reach the planned destination after approximately 5 hours of flight time, the occupants of the PT-DQU chose to make a precautionary landing in SJLJ. According to reports from the occupants to third parties, while still in flight, the engines failed. This failure was possibly due to lack of fuel.

The landing was made at SJLJ, threshold 11. After touching down, the aircraft traveled the entire runway length and overran its longitudinal edge (overrun), coming to a stop about 10 meters after the opposite threshold. The auxiliary landing gear broke and there was damage to the fuselage, propeller sets, and engines.

According to third party information, the runway had 400 meters available for landing and take-off, although records indicate that it had the dimensions of 700 x 30 meters. This fact may have contributed to the PT-DQU exceeding its longitudinal limit.

Thus, it was found that the operation occurred in disagreement with the aeronautical laws in force and resulted in safety levels below the minimum acceptable established by the Brazilian State.

By failing to meet the minimum safety levels set by the Brazilian State, guaranteed through compliance with the ICAs and RBACs, latent unsafe conditions may be created, which should be eliminated or mitigated through compliance with the regulations themselves.

3. CONCLUSIONS.

3.1 Facts.

- a) the pilot on board had a valid CMA;
- b) the pilot on board did not have the MLTE Rating;
- c) the probable conductor did not have a valid CMA;
- d) the probable conductor was Paraguayan and did not present any documentation proving he had pilot training;
- e) the pilot on board and the conductor were not qualified and had no experience registered in the aircraft model of this occurrence;
- f) the aircraft had a valid CVA;
- g) the weather conditions were not favorable for the visual flight;
- h) the airframe, engine and propeller logbooks were not presented;
- i) it was not possible to calculate the weight, balance, and autonomy of the aircraft;
- j) the respective Flight Plan was not presented;
- k) according to reports from the occupants to third parties, still in flight, both engines failed;
- l) after landing, the aircraft flew all the way down the runway and went over the longitudinal edge (overrun), stopping about 10 meters after the opposite threshold;
- m) according to third-party information, the runway had 400m available for landing and takeoff;
- n) the aircraft had substantial damage; and
- o) all occupants left unharmed.

3.2 Contributing factors.

- **Adverse meteorological conditions – undetermined.**

Probably, due to the meteorological conditions encountered en route, deviations were performed to maintain the flight in visual meteorological conditions. It may have impacted the duration of the planned stage, causing an increase in flight time with a direct impact on the plane's range.

- **Airport infrastructure – undetermined.**

According to third-party information, despite having declared dimensions of 700 x 30 m, the SJLJ runway only had 400 m available for takeoff and landing.

- **Flight planning – undetermined.**

It is possible that inadequate preparation for the flight occurred when the operational conditions of the route were not considered, especially those related to meteorological conditions and the characteristics of the selected Aerodrome for the precautionary landing.

- **Insufficient pilot's experience – a contributor.**

The pilot on board had no experience in the model of the plane and the type of flight, having a recorded total of 45 hours and 25 minutes.

4. SAFETY RECOMMENDATION.

A proposal of an accident investigation authority based on information derived from an investigation made intending to prevent accidents or incidents and which in no case has the

purpose of creating a presumption of blame or liability for an accident or incident. In addition to safety recommendations arising from accident and incident investigations, safety recommendations may result from diverse sources, including safety studies.

In consonance with Law n°7565/1986, recommendations are made solely for the benefit of the air activity operational safety, and shall be treated as established in the NSCA 3-13 “Protocols for the Investigation of Civil Aviation Aeronautical Occurrences conducted by the Brazilian State”.

None.

5. CORRECTIVE OR PREVENTATIVE ACTION ALREADY TAKEN.

None.

On March 23th, 2023.