

COMANDO DA AERONÁUTICA
CENTRO DE INVESTIGAÇÃO E PREVENÇÃO DE
ACIDENTES AERONÁUTICOS



FINAL REPORT
A-173/CENIPA/2015

OCCURRENCE:	ACCIDENT
AIRCRAFT:	PT-HZL
MODEL:	AS 350 B2
DATE:	13DEC2015



NOTICE

According to the Law n° 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 taking into account 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 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 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 n° 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. 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

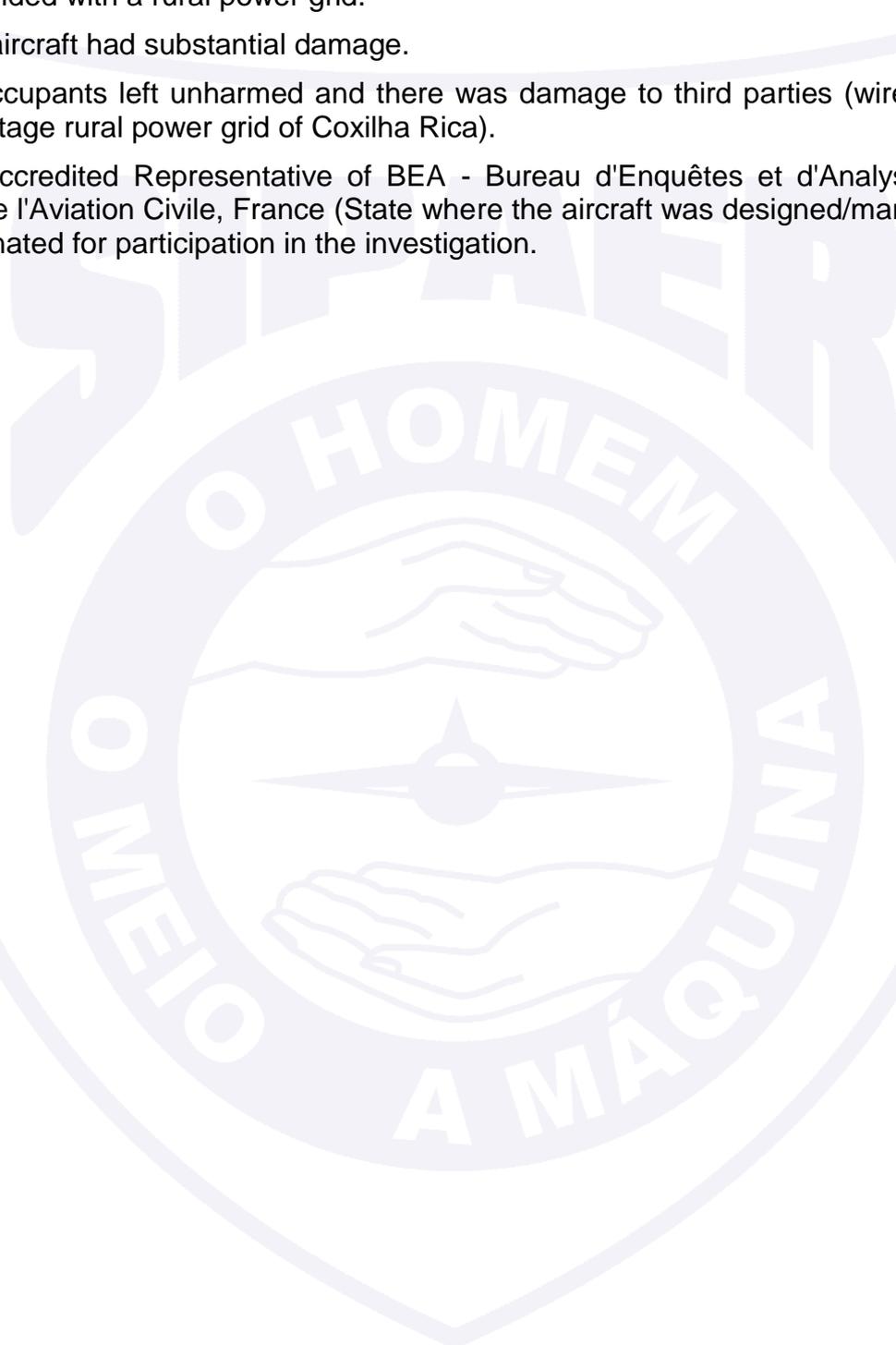
This is the Final Report of the 13DEC2015 accident with the AS 350 B2 aircraft, registration PT-HZL. It was classified as (CTOL) "Collision with Obstacle during Take-off and Landing".

During the take-off from a restricted area, on a police operational patrol flight, the aircraft collided with a rural power grid.

The aircraft had substantial damage.

All occupants left unharmed and there was damage to third parties (wire rupture of the low voltage rural power grid of Coxilha Rica).

An Accredited Representative of BEA - Bureau d'Enquêtes et d'Analyses pour la Sécurité de l'Aviation Civile, France (State where the aircraft was designed/manufactured), was designated for participation in the investigation.



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GLOSSARY OF TECHNICAL TERMS AND ABBREVIATIONS

ANAC	Brazil's National Civil Aviation Agency
BAPM-SC	State of Santa Catarina Military Police Aviation Battalion
BEA	<i>Bureau d'Enquêtes et d'Analyses pour la Sécurité de l'Aviation Civile</i>
CA	Airworthiness Certificate
CBA	Aeronautics Brazilian Code
CENIPA	Aeronautical Accident Investigation and Prevention Center
CG	Center of Gravity
CIV	Pilot's Flight Logbook
CMA	Aeronautical Medical Certificate
FNCO	Notification and Confirmation of Occurrence Form
GSO	Safety Manager
IAM	Annual Maintenance Inspection
ICA	Command of Aeronautics' Instruction
IGE	In Ground Effect
IHST	International Helicopter Safety Team
INVH	Flight Instructor Rating - Helicopter
IS	Supplementary Instruction
MAX T/O	Maximum Takeoff Power
PWR	
METAR	Meteorological Aerodrome Report
NG	Engine Generator Speed
NSCA	Aeronautics Command System Standard
OEE	Special Equipment Operator
PCH	Commercial Pilot License – Helicopter category
PMD	Maximum Take Off Weight
PPH	Private Pilot License – Helicopter category
RBHA	Brazilian Aeronautical Certification Regulation
RS	Safety Recommendation
SBLJ	CAO location designator – Lages Aerodrome - SC
SERIPA	Regional Aeronautical Accident Investigation and Prevention Service
UTC	Universal Time Coordinated
VRF	Visual Flight Rules

1. FACTUAL INFORMATION.

Aircraft	Model: AS 350 B2 Registration: PT-HZL Manufacturer: Eurocopter France	Operator: Santa Catarina Military Police
Occurrence	Date/time: 13DEC2015 - 1400 UTC Location: Outside the Aerodrome Lat. 28°09'39"S Long. 050°26'25" W Municipality – State: Lages - SC	Type(s): [CTOL] Collision with Obstacle during Take-off and Landing Subtype(s): Nil

1.1 History of the flight.

The aircraft took off from an eventual landing area in the region of Coxilha Rica - SC, to Lages Aerodrome - SC (SBLJ), at about 1400 (UTC), in order to carry out a police patrol mission with two pilots and two Special Equipment Operators (OEE) on board.

During a maximum power takeoff from a restricted area, in an attempt to avoid a collision against an elevation in the terrain, and after traveling 200 meters over the Pelotinhas River channel, the aircraft collided against a rural power grid.

The crew realized the collision and continued on the flight for another 18 minutes until the return to its operational base in Lages (SBLJ). After landing, on post-flight inspection, damage (missing one piece) was found in the median position of the main rotor blade upper camber and a fracture in its lower camber.

The aircraft had substantial damage. The two pilots and the two OEEs were unharmed. There was damage to third parties (wire rupture of the low voltage rural power grid of Coxilha Rica).

1.2 Injuries to persons.

Injuries	Crew	Passengers	Others
Fatal	-	-	-
Serious	-	-	-
Minor	-	-	-
None	4	-	-

1.3 Damage to the aircraft.

Damage to the yellow blade of the main rotor.



Figure 01 - Image of the damage on the upper camber of the yellow blade.

1.4 Other damage.

Wire rupture of the low voltage rural power grid of Coxilha Rica - SC.

1.5 Personnel information.

1.5.1 Crew's flight experience.

	Hours Flown			
	Pilot	Copilot	Trip (OEE)	Trip (OEE AL)
Total	1.700:00	100:00	1500:00	115:00
Total in the last 30 days	23:20	15:50	15:50	15:50
Total in the last 24 hours	00:40	00:40	00:40	00:40
In this type of aircraft	1200:00	60:00	1300:00	100:00
In this type in the last 30 days	23:20	15:50	15:50	15:50
In this type in the last 24 hours	00:40	00:40	00:40	00:40

N.B.: The Data on the flown hours were obtained from the Pilots' (CIV) and crewmembers' (OEE) Flight Logbook records.

1.5.2 Personnel training.

The pilot took the Private Pilot Course – Helicopter (PPH) at EDRA *Aeronáutica*, in São Paulo – SP, in 1999.

The copilot took the Private Pilot Course – Helicopter (PPH) at *Plano de Voo* Civil Aviation School, in Itapema – SC, in 2015.

The crewmember held the Special Equipment Operator (OEE) course at the Santa Catarina Military Police Aviation Battalion (BAPM-SC), in Florianópolis - SC, in 2015.

The second crewmember (OEE AL) was still in operational formation, and held the Special Equipment Operator course at the BAPM-SC, in Florianópolis - SC, in 2015 and was completing supervised internship.

1.5.3 Category of licenses and validity of certificates.

The pilot had the Commercial Pilot License – Helicopter (PCH) and had valid Ratings for H350 aircraft and INVH.

The copilot had only a Private Pilot License -Helicopter (PPH) and had valid Rating for R22 aircraft. He did not have Rating for the type of helicopter used in the mission (H350).

The crewmember had valid Special Equipment Operator (OEE) Rating.

The second crewmember (OEE AL) had not yet obtained technical qualification, as he was still completing the supervised training of Special Equipment Operator.

1.5.4 Qualification and flight experience.

The pilot was qualified and had experience in that kind of flight.

The copilot had only a Private Pilot License -Helicopter (PPH).

The crewmember (OEE) was qualified and had experience in that kind of flight.

The second crewmember (OEE AL), still in training, was not operationally qualified to perform that type of flight.

1.5.5 Validity of medical certificate.

The pilot had valid Aeronautical Medical Certificate (CMA).

The copilot had valid Aeronautical Medical Certificate (CMA), but he had an operational limitation (prohibited solo flight and instruction flight) due to medical restriction.

The crewmember had valid Aeronautical Medical Certificate (CMA).

The second crewmember (OEE AL) had valid Aeronautical Medical Certificate (CMA).

1.6 Aircraft information.

The aircraft, serial number AS2941, was manufactured by Eurocopter France, in 1997.

The aircraft had valid Certificate of Airworthiness (CA).

The last inspection of the aircraft, the "30 hour-type" on 16NOV2015, was performed by AEROMOT *Aeronaves e Motores S/A*, in Porto Alegre - RS, having flown 34 hours and 30 min after the inspection.

The last revision of the aircraft, the "IAM" type, was carried out in 20AUG2015 by AEROMOT *Aeronaves e Motores S/A*, in Porto Alegre - RS, having flown 132 hours after the revision.

1.7 Meteorological information.

The conditions were favorable for the visual flight. The air temperature at the time of the occurrence was 35°C.

1.8 Aids to navigation.

Nil.

1.9 Communications.

Nil.

1.10 Aerodrome information.

The occurrence took place outside the Aerodrome.

1.11 Flight recorders.

Neither required nor installed.

1.12 Wreckage and impact information.

The aircraft collided against a rural power grid, on the bed of the Pelotinhas River, in the region of Coxilha Rica, between 25 and 35 meters height. The impact occurred on one of the main rotor blades and the aircraft returned to its operational base.

1.13 Medical and pathological information.

1.13.1 Medical aspects.

Not investigated.

1.13.2 Ergonomic information.

Nil.

1.13.3 Psychological aspects.

Not investigated.

1.14 Fire.

There was no fire.

1.15 Survival aspects.

The aircraft continued on the flight and returned to its operational base in SBLJ.

1.16 Tests and research.

The operator called the AEROMOT Company, with which there was a maintenance contract, to make the necessary procedures and repairs immediately after the landing of the aircraft in SBLJ. This procedure was performed without the knowledge or the release of the aircraft by the SERIPA V.

In the exams, the lack of part of the upper camber (8cm x 16cm hole) and a crack of 12cm in the lower camber of the yellow blade of the main rotor were verified (Figures 2 and 3).



Figure 2 - Dimension of damages on the upper camber of the blade.



Figure 3 - Dimension of cracks in the lower camber of the blade.

The damaged blade had total loss, according to the AEROMOT shop. According to this company, there was no damage to the engine or the main gearbox.

1.17 Organizational and management information.

The copilot was being scheduled to perform police missions (public security operations) without having the Commercial Pilot License (PCH) required to carry out public security operations (Police Mission), as provided in the Brazilian Aeronautical Certification Regulation (RBHA) 91, section 91.957, letter "b":

The pilot, second in command, must have at least a commercial pilot's license (PCA or PCH) and a certificate of technical qualification for the type or class of aircraft he or she operates. The CHT requirement can be waived when the

aircraft's Commander has the authorization of INVH, INVA, PLA or PLH, according to item 61.95 of RBHA 61;

1.18 Operational information.

The aircraft was within the weight and balance parameters specified by the manufacturer.

According to observers' reports, it was a patrolling mission and it was not planned in the schedule, nor had it been commented at the operational briefing, the landing at Coxilha Rica, rural area of Lages - SC. The pilot decided this occasional landing during the flight.

The place where the aircraft operated was an area of eminently restricted operational characteristics, since it had small dimensions and with the presence of hills, high vegetation, araucaria forest and rural power grid with 70ft of altitude.

As a result, the maximum power takeoff was the option chosen by the pilot to carry out the abandonment of the region. This maneuver aims to take off from a location whose characteristics or obstacles surrounding the aircraft prevent a normal takeoff.

Before performing this type of takeoff, one should refer to the performance chart in flight hovering out of the ground effect (OGE).

During the investigation, it was found that the aircraft was within the envelope compatible with the intended take-off profile.

The standard procedure of maximum performance take-off, in restricted area, as recommended in the helicopter pilot course manuals (PPH, PCH and INVH) and the H350 aircraft itself, instructs that the following steps must be observed:

- a) the pilot shall carry out all the checks provided for normal take-off;
 - b) observe reference points at the front and sides of the aircraft in order to avoid unintentional movements during the maneuver;
 - c) act in the collective applying power in a smooth and constant way, seeking to achieve and maintain a rate of rise of 200ft / min;
 - d) when perceiving movement tendencies of the aircraft, act on the pedals to correct the bow variations (in the case of the H350 helicopter, it is normal to start the maneuver with the right foot pedal);
 - e) act in the cyclic to maintain the vertical of the point (when leaving the ground, keeping the vertical, the aircraft will take a slightly inclined attitude to the right);
 - f) as soon as the skis are no longer leaned on, operate in the cyclic to avoid displacements in the horizontal plan, in the pedals, to avoid the variations of bow, and in the collective to reach and maintain a rate of constant rise and according to the availability of power;
 - g) when reaching 100ft in altitude (free of obstacles), observing the visual references ahead to maintain the takeoff line, progressively lead the cyclic ahead to gain speed; and
 - h) act on the flight controls, in order to gradually change the rate of rise by speed ahead, seeking to achieve, in the case of H350, speed of 60 knots and positive ratio of 500ft/min;
- Never allow a negative indication of rate in the go-around procedure.

As a benchmark of proficiency and safety, it is also recommended, during a maximum power take-off to remain within a circle of 5 meters in diameter, a maximum heading variation of $\pm 10^\circ$ and maintenance of a rate of rise of 200ft / min.

The EUROCOPTER ROTORCRAFT FLIGHT MANUAL "AS350 B2", 6th Rev. 1999, Section 4.1 "Operating Procedures", Section 4.2 "Engine Power Check" and Section 5 "Performance", described the standard take-off and climb procedure, power check available, presented the tables and performance graphs that were to be used to calculate the maximum takeoff weight, both in the hovering within the soil effect (IGE) and in the Maximum Takeoff Power (MAX T / O PWR) OGE, conditions that are intrinsically associated with maximum performance takeoff.

1.19 Additional information.

This occurrence was notified by the operator (by filling out the FNCO) only on 23FEB2016, failing to comply with the provisions of Articles 88 and 88N of the CBA and items 4 and 5 of the Aeronautics Command System Standard (NSCA) 3-13 - " Protocols for Investigation of the Civil Aviation Aeronautical Events conducted by the Brazilian State "of the SIPAER, 2014

In the same way, there was a noncompliance by the maintenance company with that determined in RBHA 43, section 43.13 and Supplementary Instruction (IS) n^o 43.13-004, Revision A, item 5.4, of ANAC, 2012, which deal with repair procedures of damaged aircraft in an aeronautical accident:

5.4 Beginning of work

5.4.1 No certified company may initiate repairs on a damaged aircraft, in an accident / incident aircraft or ground occurrence according to item without ANAC's authorization.

5.4.2 If the accident report provided for in paragraph 5.3.1 of this IS has not been made, ANAC's authorization shall be conditional on the receipt of all available information on the occurrence.

5.4.3 Certified companies must, after authorization by ANAC and before starting repairs, fill out a standardized breakdown report (Appendix C of this IS), which will detail the damages suffered by the aircraft, including photographs.

According to 2016 data from the International Helicopter Safety Team (IHST), about 20% of all helicopter accidents involved collision against power grids or other obstacles. Pilots should therefore be constantly on the alert for this real danger.

1.20 Useful or effective investigation techniques.

Nil.

2. ANALYSIS.

It was a patrol flight, with two pilots and two OEEs on board.

According to observers' reports, the landing at Coxilha Rica, rural area of Lages - SC was not planned in the schedule nor was it commented at the operational briefing and it was decided by the Commander during the flight.

In the approach to landing, the pilots showed concern about the operational limits (mainly T4 and NG indications), which were being extrapolated.

The area where the aircraft operated was an area of eminently restricted operational characteristics, since it had small dimensions, with the presence of hills, high vegetation, araucaria forest and rural power grid.

As a result, the maximum performance takeoff was the option chosen by the Commander to exit the area. This maneuver aims to take off from a location whose characteristics or obstacles surrounding the aircraft prevent a normal takeoff.

The aircraft was within the limits of weight and center of gravity (CG) specified by the manufacturer.

However, the combination of the altitude of the landing area (around 3,700ft) and the high air temperature (around 35°C), combined with the application of maximum torque, constituted factors that could, in the perception of the commander, extrapolate the operating limits of the engine (NG and T4).

In this sense, during the maximum performance takeoff, the decision was taken to stop the vertical climb before the recommended time to clear the obstacles (100ft) and start a forward displacement, without there being enough energy to maintain a positive ratio that succeeded in overcoming the power grid against which the aircraft collided.

Considering that the aircraft was within the envelope compatible with the take-off profile, this decision proved to be inadequate.

The takeoff would only be aborted in the event of a critical problem, in which case the aircraft should return to the place of origin, not recommending a forward movement without the use of a positive upward ratio.

Thus, a negative ratio should not be permitted under this phase of the flight, even if this would involve an extrapolation of the engine's operational limits, in order to avoid collision.

In the same way, during a maximum power take-off, it was also recommended to remain within a circle of 5 meters in diameter, with a maximum heading variation of $\pm 10^\circ$ and a maintenance of a rate of rise of 200ft / min. It should be noted that, in the case in question these parameters were not obeyed when the go-around procedure was started before the considered ideal altitude.

Another aspect that helps to understand the dynamics that contributed to the event is related to the fact that both pilots were focused on the external environment of the cockpit.

In this maneuvering profile, the division of tasks is fundamental for the success of the take-off, since it is necessary an effective cabin coordination to identify any abnormality. Thus, the lack of an adequate briefing, which clearly defined the function of each crewmember during the maneuver, and the lack of qualification of the copilot to perform on-board duties may have contributed to this occurrence.

In this context, the copilot, at takeoff, did not monitor the engine instruments. By keeping his attention to the external environment, the task of monitoring the engine parameters was no longer enforced, which in some way may have contributed to the Commander's failure to employ the available power to overcome obstacles and avoid collision.

The impact caused a hole in the upper camber and a crack in the lower camber of one of the main rotor blades, but the aircraft proceeded back to its operational base.

In the event of a collision against wires, as the pilot has no precise idea of the severity or extent of damage to the aircraft, the safety doctrine states that an immediate precautionary landing should be made for damage assessment.

The facts mentioned above indicated that the adopted decisions were not timely due to an inappropriate assessment of the circumstances surrounding the occurrence.

An appropriate decision-making process involves identifying possible alternatives, choosing and executing appropriate actions, and monitoring results.

By altering the initial planning of the scheduled mission, there was a compromise of the crew's examination of the circumstances of the flight.

In the present case, the failures in the decision-making process were evidenced both by making a landing in a restricted place, without proper planning, and by the decision to proceed after the collision, without making an immediate precautionary landing.

On the other hand, the routing of the aircraft to the repairs without the occurrence reporting and the acquiescence of the investigating command denoted low adherence to the culture of operational safety, to the extent that the research work and, consequently, prevention were adversely affected by the non-preservation of operating parameters and aircraft conditions.

In the same way, there was a noncompliance by the maintenance company with that determined in Supplementary Instruction (IS) nº 43.13-004, Revision A, item 5.4, of ANAC, 2012, which dealt with the procedures for repairing aircraft damaged in an aeronautical accident:

5.4 Beginning of work

5.4.1 No certified company may initiate repairs on a damaged aircraft, in an accident / incident aircraft or ground occurrence according to item without ANAC's authorization.

5.4.2 If the accident report provided for in paragraph 5.3.1 of this IS has not been made, ANAC's authorization shall be conditional on the receipt of all available information on the occurrence.

5.4.3 Certified companies must, after authorization by ANAC and before starting repairs, fill out a standardized breakdown report (Appendix C of this IS), which will detail the damages suffered by the aircraft, including photographs.

No report of faults was issued, and PT-HZL returned to flight without approval of the Airworthiness condition by the regulatory agency.

3. CONCLUSIONS.

3.1 Facts.

- a) the crewmembers had valid Aeronautical Medical Certificates (CMA);
- b) the pilot had valid Ratings for the H350 aircraft and INVH;
- c) the pilot was qualified and had experience on that kind of flight;
- d) the copilot did not have Rating for the H350 aircraft;
- e) the copilot was not qualified and did not have experience on that kind of flight;
- f) the copilot did not have a PCH License to carry out public security missions;
- g) the aircraft had valid Airworthiness Certificate (CA);
- h) the aircraft was within the limits of weight and balance;
- i) the airframe and engines logbook records were updated;
- j) it was a police operational patrol flight in the rural area of Coxilha Rica;
- k) an occasional landing was performed in a restricted area;
- l) according to reports, in the landing approach, the operational limits (T4 and NG) were extrapolated;
- m) the maximum performance takeoff was the option chosen by the Commander to exit the restricted area;

- n) during the maximum performance takeoff, the decision was taken to stop the vertical rise, before the recommended obstacle clearance (100ft);
- o) in the go-around procedure there was a collision against the wires of the power grid;
- p) after the collision, the aircraft proceeded on the flight for another 18 minutes, returning to its operational base in Lages - SC;
- q) the aircraft was sent to the repairs without the report of the occurrence and acquiescence of the investigating command;
- r) no failure report was issued;
- s) the aircraft returned to flight without approval of the airworthiness condition by the regulatory agency (ANAC);
- t) the aircraft had substantial damage; and
- u) all occupants were unharmed.

3.2 Contributing factors.

- Crew Resource Management – undetermined.

The lack of an adequate briefing, which clearly defined the function of each crewmember during take-off, and the lack of qualification of the copilot to perform on-board duties may have contributed to this occurrence.

The copilot, by keeping his attention to the external environment, failed to keep up with the engine parameters, which in some way may have contributed to the commander's failure to employ the available power to overcome obstacles and avoid collision.

- Organizational culture – a contributor.

The permissiveness and failures regarding established organizational processes, as well as the inadequacy of the management performed by the organization after the occurrence, indicated little appreciation of aspects related to flight safety. The existence of a weakened safety culture favored the attitudes adopted by the crew during this occurrence, resulting in a critical situation during the flight and subsequent accident.

- Piloting judgment – a contributor.

The pilot made an inadequate evaluation of certain aspects related to the operation of the aircraft. During the maximum performance takeoff, he decided to stop the vertical rise before the recommended height to clear obstacles (100ft) and started a forward movement without enough energy to maintain a positive upward rate that would succeed in overcoming the power grid against which the aircraft collided.

- Flight planning – a contributor.

There was inadequacy in the preparation work for landing in the area, since not all necessary procedures for the operation were adopted in an environment of eminently restricted operational characteristics, with small dimensions, with the presence of hills, high vegetation, Araucária forest and with the presence of rural power grid wires.

In the same way, a briefing, which contemplated all the situations that the maneuver required, was not performed.

- Management planning – a contributor.

In relation to management planning, there was inadequacy of the organization regarding the allocation of human resources (copilot) for the development of public security operational activities without having a PCH License.

- **Decision-making process – a contributor.**

By altering the initial planning of the scheduled mission, there was a compromise of the crew's examination of the circumstances of the flight. In the present case, the flaws in the decision-making process were evidenced, among other things, by landing on a restricted space without proper planning.

- **Organizational processes – undetermined.**

The presence of a copilot without a PCH License and not qualified to operate the aircraft may have characterized flaws in the organizational processes related to the monitoring, supervision and control of the members of the organization.

- **Managerial oversight – a contributor.**

There was inadequate oversight of the organization, planning and operational activities in the operational scope, as no compliance was observed on the flight schedule of a non-qualified crewmember (copilot) to perform public security missions.

4. SAFETY RECOMMENDATION.

A proposal of an accident investigation authority based on information derived from an investigation, made with the intention of preventing 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 the 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”.

Recommendations issued at the publication of this report:

To the Brazil's National Civil Aviation Agency (ANAC):

A-173/CENIPA/2015 - 01

Issued on 09/24/2018

Act together with BAPM-SC to ensure that this operator has adopted management procedures that do not allow flights to be performed by crewmembers who are not properly qualified to carry out a police flight mission.

A-173/CENIPA/2015 - 02

Issued on 09/24/2018

Act in conjunction with BAPM-SC, seeking to guide the operator on the importance of including in its Operations Manual the standardization for landing in restricted areas and take-off of maximum performance in accordance with the manufacturer's manuals.

A-173/CENIPA/2015 - 03

Issued on 09/24/2018

Act with the Company AEROMOT *Aeronaves e Motores* Ltd., so that this shop does not perform any type of repair service on a crashed aircraft without communication and authorization of the regulatory agency, according to the legislation in force.

5. CORRECTIVE OR PREVENTATIVE ACTION ALREADY TAKEN.

On 07MAR2016, a meeting was held with the BAPM-SC Second-in-Command, the 5th BAPM-SC Company Commander, the 5th BAPM-SC Second-in-Command, the BAPM-SC Safety Manager (GSO) and the Chief of Material of the 5th Company of the BAPM-SC, at the operational base of the 5th Company, in Lages – SC. It was pointed out the procedures that were not complied with, prevised in the SIPAER legislation (Law no. 12.970 / 2014 and NSCA 3-13 / 2014) and in the CBA itself, as well as the possible contributing factors of this accident and also some preventive measures were discussed.

On September 24th, 2018.

