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AVIACIÓN **C**IVIL

Interim Statement EXT Andorra/2011

Accident involving an helicopter
AS 350, registration EC-LHP,
operated by Heliand (CAT
Helicopters), at Pleta de Juclar
(Canillo – Principado de Andorra),
on 15 June 2011



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SUBSECRETARÍA

COMISIÓN DE INVESTIGACIÓN
DE ACCIDENTES E INCIDENTES
DE AVIACIÓN CIVIL

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Foreword

This document constitutes the interim statement envisioned in Article 16.7 of Regulation (EU) no. 996/2010 of the European Parliament and of the Council, as well as in paragraph 6.6 of Annex 13 to the Convention on International Civil Aviation. The statement includes the details of the progress of the investigation and the most important operational safety issues revealed to date. The information provided herein is subject to change as the investigation proceeds.

Pursuant to the contents of Regulation (EU) no. 96/2010 of the European Parliament and of the Council and of Annex 13 to the Convention on International Civil Aviation, the investigation is purely technical in nature and is not intended to determine or apportion blame or liability. The investigation is being conducted without necessarily resorting to evidentiary procedures and for the sole purpose of preventing future accidents.

Consequently, the use of this information for any purpose other than to prevent future accidents may result in faulty conclusions or interpretations.

Abbreviations

00°	Degrees
AMT	Aircraft Maintenance Technician
BEA	Bureau d'Enquêtes et d'Analyses pour la Sécurité de l'Aviation civile
CPL	Comercial Transport Pilot Licence
CPL(H)	Commercial Pilot License (Helicopter)
DECU	Digital Engine Control Unit
h	Hour(s)
m	Meter(s)
UTC	Universal Time Coordinated

DATA SUMMARY

LOCATION

Date and time	Wednesday, 15 June 2011; 07:00 h UTC ¹
Site	Pleta de Juclar (Canillo). Principado de Andorra

AIRCRAFT

Registration	EC-LHP
Type and model	AS 350 B3
Operator	Heliand (CAT Helicopters)

Engines

Type and model	TURBOMECA-ARRIEL 2B1
Number	1

CREW

Pilot in command

Age	61 years old
Licence	Commercial Helicopter Pilot (CPL(H))
Total flight hours	13,677 h
Flight hours on the type	3,655 h

INJURIES

	Fatal	Serious	Minor/None
Crew	1		
Passengers	4	1	
Third persons			

DAMAGE

Aircraft	Destroyed
Third parties	None

FLIGHT DATA

Operation	Aerial work – Commercial – Construction/sling load
Phase of flight	En route

INTERIM STATEMENT

Date of approval	3 May 2012
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¹ All times in this report are in UTC unless otherwise specified. To obtain local time, add 2 hours to UTC.

1. SUMMARY OF ACCIDENT

The morning of Wednesday, 15 June 2011, the helicopter had performed several flights with sling loads in another area. After completing this work, it headed to the company's base in La Massana to transport an external load consisting of two cages, one empty and another with a drum for diesel, also empty². Onboard were the pilot (seated to the right) and the helicopter maintenance technician (AMT, seated to the left). They proceeded to fly to the northeast, toward the Incles bridge (see Appendix A), where several workers were waiting for them with the load to be taken to a shelter in Juclar, located next to Pleta de Juclar, in preparation for opening the shelter. Once there, the helicopter left the cages on the ground and a third person released the hook from the sling. The helicopter moved to the right, put the sling down and landed facing the southwest, leaving the sling in the central part of the skids, the load to its left and the engine running. The counterweight associated with the sling to keep it from swinging during the flight, and attached using the same system used to hook the load, remained with the load (cages) instead of being attached to the sling.

The plan was to fly several workers to the shelter during the first few flights before moving the load. Onboard the first flight to the shelter were two technicians who were going to inspect the water purifier, a maintenance technician from the Canillo town hall and the custodian of the shelter. The helicopter's AMT, seated in the left seat of the cockpit, got out of the helicopter to help the workers climb onboard, also via the left side and, once everyone was inside, ensured the door was closed properly.

At around 07:00 UTC, the helicopter took off, making a 180° turn to the left to head to the shelter via the Incles valley. As it took off, personnel on the ground noted that the sling remained attached to the helicopter, which is not usually the case during personnel transfers. One eyewitness, located parallel to the takeoff flight path, made the same observation, and emphasized the fact that the helicopter was flying very low, and that perhaps the sling had even struck a billboard just beyond the takeoff area, although the billboard was later inspected and no evidences were found of such strike.

The helicopter continued en route to the valley that led to the shelter. Some 2,500 m further on, two eyewitnesses, forest rangers working in the area, saw the helicopter flying at a low altitude, some 100 m above the road, with the sling hanging below. One reported that upon noticing the sling, he continued to watch it until it disappeared over some crags, after reaching a short steep slope (area immediately before the accident site). He did not notice any strange maneuvers. The eyewitnesses then heard a loud flash fire, and notified their supervisors by radio before running toward the area.

² The external load system consisted of a 10-meter long sling with a load hook at the end, from which hung a counterweight system comprising a sphere with a hook. The cages were hung from this hook.

Another eyewitness, the first to arrive at the crash site and who was hiking in the area, said that when he was below the crags, he saw the helicopter pass overhead to his right toward the crags and that there was "an orange rope hanging from it".

The accident took place after the helicopter flew past the crags. The helicopter impacted a tree situated on the north shore of a stream. The wreckage was turned 270° with respect to the original heading. The airframe was upside down. There had been a fire after the impact and the aircraft was destroyed. Of the 6 helicopter occupants, five of them died as a result of the impact, including the pilot and the maintenance technician. Four were burned and a fifth was ejected from the aircraft. The sixth occupant was the lone survivor and had burns over 70% of his body.

The hiker who witnessed the event reached the accident site a couple of minutes later, followed by the rangers some 20 minutes later. The fire had already gone out and they tended to the survivor while they searched for more survivors and confirmed the nature of the emergency.

2. INVESTIGATION

The pilot had a valid and in force license and medical certificate. He had 13,677 flight hours and ample experience in the field. The aircraft had a valid and in force airworthiness certificate and had 356:35 flight hours at the start of the accident flight. The last maintenance inspection (300 h) had been performed on 5 May 2011, with 298 h on the aircraft.

Taking part in the investigation are the Government of Andorra, France's civil aviation accident investigation authority (BEA³), the manufacturer of the helicopter (Eurocopter), of the engine (Turbomeca), of the sling (Texbor) and of the load hook (On Board Systems).

During the field investigation it was noted that just at the top of the crags, there was damage to the branches on one of the pine trees located in the area. The largest and most damaged branch had been torn from the trunk and exhibited abrasion and friction damage in one area, with a clear section near this area without any bark. Scattered branches, parts of the inner and outer sling cables, the protective sheath from the upper end of the sling and pieces of blade (fiber and foam) were found between this pine tree and the impact site. In the area immediately before the impact site there was a pine tree that was split in half with very little of its trunk left. The rest of the tree was found scattered among the main wreckage. The sling was found cut in two on the other side of the stream some 80 m away from the main wreckage.

³ BEA – Bureau d'Enquêtes et d'Analyses is the French authority responsible for investigating events involving civil aviation.

The assembly consisting of the main gearbox, the mast and the main rotor was torn from the frame. The three blades remained attached to the head. Two had been affected by the fire. One of the burned blades had two significant marks along its leading edge some 250 cm away from the root that indicated that the sling had perhaps gotten tangled in the blade. The sling showed signs of abrasions in the area of the cut and remains of what appeared to be paint from the blade.

The helicopter skids were found among the main wreckage. They were upside down and facing in the same direction as the airframe (offset 270° from the original course). Also found was the trapeze structure that enveloped the load hook. The hook itself was closed. No parts of the sling were found in this area.

The engine and its associated DECU⁴ were inspected onsite with aid from the manufacturer, followed by an inspection of the main transmission and helicopter's load hook. None showed any signs of having failed. The engine data from the DECU could not be recovered. The data stored on the Brite Server⁵ unit on the instrument panel was also unrecoverable due to severe fire damage to the unit.

3. PROGRESS OF THE INVESTIGATION

Investigators are continuing to evaluate all of the details involving the operation on the day of the accident. They are also studying the reasons why the sling was left hanging from the helicopter when the workers boarded the aircraft. The paint remains found on the sling are also being analyzed, as is a sample from the blade, in an effort to determine whether the two components came in contact over the course of the accident.

Once the investigation is completed, the final report will be written and published.

⁴ DECU – Digital Engine Control Unit.

⁵ Brite Server – Unit located on the instrument panel used to store flight data.

APPENDIX A
Diagram of the flight path
and of the wreckage



