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COMISIÓN DE
INVESTIGACIÓN
DE ACCIDENTES
E INCIDENTES DE
AVIACIÓN CIVIL

Interim Statement A-004/2011

Accident involving a PZL SOKOL W-3AS
helicopter, registration SP-SYA,
operated by Heliseco, in the area
of Dos Aguas - Caldera de Taburiente
of La Palma island (Santa Cruz
de Tenerife) on 24 February 2011



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SUBSECRETARÍA

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COMISIÓN DE INVESTIGACIÓN DE ACCIDENTES E INCIDENTES DE AVIACIÓN CIVIL

Tel.: +34 91 597 89 63
Fax: +34 91 463 55 35

E-mail: ciaiac@fomento.es
<http://www.ciaiac.es>

C/ Fruela, 6
28011 Madrid (España)

Important notice

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

°	degree
°C	degree centigrade
ATPL (H)	Airline Transport Pilot License (Helicopter)
cm	centimeter
CVR	Cockpit Voice Recorder
ENE	East-northeast
FDR	Flight Data Recorder
FEL	Flight Engineer License
JAR-FCL	Joint Aviation Requirements – Flight Crew Licensing
Kg	kilogram
Km	Kilometers
m	Meters
P/N	Part Number
S/N	Serial Number
UTC	Coordinated universal time
VOR	Very-high frequency omnidirectional range

DATA SUMMARY**LOCATION**

Date and time	Thursday, 24 February 2011, 09:30 UTC
Site	Dos Aguas - Caldera de Taburiente of La Palma island (Santa Cruz de Tenerife)

AIRCRAFT

Registration	SP-SYA
Type and model	PZL SOKOL W-3AS
Operator	HELISECO

Engines

Type and model	PZL-10W
Number	2

CREW

	Pilot in command	Flight engineer
Age	56 years	53 years
License	ATPL(H)	FEL (flight engineer licence)
Total flight hours	7.703 hours	5.343 hours
Flight hours on the type	3.560 hours	4.525 hours

INJURIES

	Fatal	Serious	Minor/None
Crew		2	
Passengers			
Third persons			

DAMAGE

Aircraft	Significant
Third parties	None

FLIGHT DATA

Operation	Aerial work - Commercial - Construction/sling load
Phase of flight	Maneuvering

REPORT

Date of approval	29 February 2012
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The crew, consisting of a pilot and a flight engineer, along with a mechanic employed by the operator and a technician from the helicopter leasing company, Hispánica de Aviación, S.A., which was the contractor for the work, had flown the day before the accident from the island of Tenerife, where the aircraft was based, to the airport of La Palma for the purpose of carrying out external sling load operations in the Caldera de Taburiente National Park. The work involved transporting various loads to different points within the park, and transporting discarded materials outside the park on the return flight.

The material to be transported had been taken to the parking area located at the entrance to the gorge named Barranco de las Angustias, in an area called "La Viña", which would be used as a staging area. The material would be transported to points P-1 and P-2 inside the caldera. Large bags with waste material would then be picked up at these points.

The day before the accident, a new point, P-3, was added near P-2, so that a tank for a water purifier could be transported there.

In order to transport the load, the crew was using a 20-m long steel cable that was attached via a non-rotating ring to the helicopter's barycentric hook. The other end of the cable had a standard hook that could only be opened manually, meaning that both the hooking and unhooking operations had to be performed by support personnel on the ground while the helicopter hovered.

At 08:12 on the day of the accident, the helicopter, with these four persons onboard, took off from the La Palma Airport and headed for the "La Viña" staging area, where it landed.

At around 09:00 the load transport operations were begun with only the pilot and the flight engineer onboard the helicopter. The first such operation involved transporting a load of cement to point P-2. Once there, they picked up a load of waste and headed for point P-3 for the purpose of evaluating the viability of conducting operations there. Inspection of this area was not done previously. Then they proceeded to the staging area.

Support personnel on the ground unhooked the waste from the sling and then proceeded to hook the water purifier tank. Once the crew received the report that the load was properly hooked, they proceeded to point P-3.

A few minutes later they arrived at point P-3 and radioed personnel on the ground, who gave them instructions regarding the exact location of the drop-off point. They also informed the crew that they could not hook the bag with trash since it was at P-1, which was located some 300 m inside the gorge, a distance that would take them some time to travel, so they asked the crew to return to the staging area without a load.

The crew agreed and started to climb. After climbing a few meters, the helicopter started moving forward as the pilot increased the speed gradually. They flew to the ENE, toward the caldera, and a few seconds later they made a 180° turn to head to the staging area.



FIGURE 1. Location of the staging area (departure) and drop-off points (P-1, P-2 and P-3), as well as of the main wreckage and of associated debris.

According to the flight engineer's statement, less than a minute after this turn they heard a loud noise from the tailcone, immediately after which the helicopter started rotating counterclockwise as seen from above.

The pilot told the engineer to stop the engines so they could auto-rotate and perform an emergency landing. The pilot managed to stop the helicopter's rotation after three full turns and headed to the area of Dos Aguas, which was the most appropriate for the landing.

As the aircraft neared the ground, it struck the south face of the valley, after which it immediately fell violently atop a small hill located in the lowest part of the valley. Since the left leg on the helicopter's main landing gear was not atop the hill, the helicopter turned and came to rest on its left side.

The information gathered indicate that weather conditions were good on the day of the accident, with weak winds, visibility in excess of 10 km, few clouds and a temperature of 15 °C at the time of the accident.

The inspection of the wreckage did not reveal any anomalies in the main rotor head or in its control mechanisms. As for the tail rotor, all of its three blades were broken, two practically at the root, and the third some 25 cm away from the root. The fragments missing from the blades were not found at the impact site. The load sling was coiled around the rotor, which rotated freely. When rotated, it was noted that it dragged the portion of the drive shaft that remained attached to it. It was also noted that the pitch control mechanism was working properly, despite the damage to some of the pitch control rods.

The outboard part of the right horizontal stabilizer, a part of the tail rotor blade and the lower portion of the sling were found a few days after the accident in the "Las Través" gorge, some 300 to 500 m away from the main wreckage.

The pilot had a valid and in force JAR-FCL airline transport pilot license (ATPL(H)) and a rating for the helicopter type. The flight engineer also had a valid and in force license and rating.

As for the helicopter, all of its documentation was in order. The last maintenance inspection had been performed on 22 February 2011, the day before the accident. The airframe had 3102.31 hours and the inspection included the items listed in the maintenance manual for the 25-hr, 50-hr and 100-hr inspections.

The aircraft was equipped with a three-channel MARS-BM cockpit voice recorder (CVR), P/N 70A-10M and S/N 275032. Channels 1 and 2 recorded the signals from the flight crew's microphones, and the third recorded the signal from the area microphone. The helicopter also had a BUR-1-2 flight data recorder (FDR), P/N MLP-23-1 and S/N 10453. The data from both recorders were properly downloaded at the laboratory of the German Federal Bureau of Aircraft Accidents Investigation.

The 28 minutes of audio information on the each of the CVR's three channels was of medium good quality. The FDR contained a little over 44 hours of flight data from 78 parameters. The data analyzed showed no significant anomalies until just before the end of the recording, when high values were recorded for several parameters, just before the pilot lost control of the helicopter.

The investigation conducted to date has ruled out aspects involving the helicopter itself as the direct cause of the accident.

The investigation is focusing on ascertaining the reasons for the loss of control by analyzing the operational aspects of the flight, specifically: the operator's procedures for planning sling operations, a study of the flight procedures, cockpit resource management, the crew's duties and the handling of the emergency.