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Second interim statement IN-036/2012

Incident involving a Boeing 737-800,
registration EI-EKV, operated by Ryanair,
while climbing to FL220 after take-off
from the Madrid-Barajas Airport, at 07:40
local time on 7 September 2012



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SUBSECRETARÍA

COMISIÓN DE INVESTIGACIÓN
DE ACCIDENTES E INCIDENTES
DE AVIACIÓN CIVIL

Edita: Centro de Publicaciones
Secretaría General Técnica
Ministerio de Fomento ©

NIPO: 161-14-134-4

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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. 996/2010 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

APU	Auxiliary Power Unit
ATPL (A)	Airline Transport Pilot License (Airplane)
CIMA	Centro de investigación de medicina aeroespacial [Aerospace Medicine Research Center]
CPL (A)	Commercial Pilot License (Airplane)
FL	Flight Level
ft	Feet
UTC	Universal Coordinated Time

DATA SUMMARY**LOCATION**

Date and time	Friday, 7 September 2012 at 07:40¹
Site	Climbing to FL220 from Madrid-Barajas (LEMD)

AIRCRAFT

Registration	EI-EKV
Type and model	Boeing 737-800
Operator	Ryanair

Engines

Type and model	CFM international CFM56-7
Number	2

CREW

	Pilot	Copilot
Age	36	21
License	ATPL (A)	CPL (A)
Total flight hours	5111	542
Flight hours on the type	3600	345

INJURIES

	Fatal	Serious	Minor / None
Crew			6
Passengers			160
Third persons			

DAMAGE

Aircraft	None
Third parties	None

FLIGHT DATA

Operation	Commercial air transport - domestic - passenger
Phase of flight	En route - climb to cruise level

2nd INTERIM STATEMENT

Date of approval	23 July 2014
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¹ All times in this report are local. To obtain UTC, subtract two hours from local time.

1. INFORMATION ON THE INCIDENT

On Friday, 7 September 2012, a Boeing 737-800 aircraft with 166 persons on board, registration EI-EKV and operated by Ryanair en route to Las Palmas de Gran Canaria (Spain), took off from the Madrid-Barajas (Spain) airport at 07:10. The takeoff was normal and weather conditions were good.

During the climb, both the cabin and cockpit crews simultaneously and without any communication between them, started to notice a strange sensation and felt physically sick. The purser, after confirming the situation with several crewmembers, decided to inform the captain. After calling him, the captain confirmed that something was happening and decided to stop the ascent and make an emergency descent. He dropped the oxygen masks, declared a MAYDAY due to what he believed to be a pressurization problem and returned to Madrid. The use of the masks did not improve the pilots' condition.

The aircraft reached its maximum altitude of 21868 ft at 07:40, after which the crew started a continuous descent until the landing. The maximum cabin altitude was 3930 ft and 10 minutes 30 seconds of flight time had elapsed since takeoff. The aircraft landed normally in Madrid at 08:08, even though the aircraft was pressurized. The front left door was opened at 08:17.

The emergency services, which had been notified, were waiting for the aircraft. The passengers disembarked normally and were taken to the terminal in shuttle buses. Of the 160 passengers, four were treated on the airplane by airport medical staff. Two of the passengers were taken to the Ramon y Cajal Hospital and released. The symptoms exhibited involved ear and throat problems due to the depressurization on the ground, as well as anxiety.

2. PROGRESS OF THE INVESTIGATION

The investigation focused on identifying and analyzing the possible causes of the symptoms reported by the pilots and cabin crew.

- Analysis of the operation of the pressurization system on both the incident and on previous flights.
- Analysis, in concert with the CIMA, of the symptoms reported by the crew from a medical standpoint.

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- Analysis of possible sources of contamination: food, actions (cleaning, etc.) involving the engines that could have resulted in substances being introduced into the air conditioning system, possible washing of the outside of the airplane, cleaning products used to wash internal surfaces in the airplane, equipment used before takeoff (APU, jetway), actions involving the air conditioning system (cleaning, products used, etc.), possible halon leak from cabin fire extinguishers.
- Analysis of the medical exams of the crew after the incident to look for specific symptoms.
- Analysis of the medical exams of passengers at the Ramon y Cajal Hospital that could indicate some type of intoxication by inhalation.
- Analysis of the flight from the standpoint of the aircraft's motion to assess its contribution to the symptoms, since the symptoms of hypoxia can be similar to those reported in motion sickness.

None of the aspects investigated so far has provided any objective information that can unequivocally explain the symptoms reported by the crew.

3. UPCOMING ACTIONS

The investigation is complete and the draft of the final report will be published soon.