ANSV AGENZIA NAZIONALE PER LA SICUREZZA DEL VOLO

PRELIMINARY REPORT

ACCIDENT
aircraft B737-400 registration marks HA-FAX,
Orio al Serio Airport,
5th of August 2016

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ANSV safety investigations are conducted in accordance with Annex 13 to the Convention on International Civil Aviation and EU Regulation No 996/2010. The sole objective of the safety investigation of an accident or incident under these Regulations is the prevention of future accidents and incidents. It is not the purpose of such an investigation to apportion blame or liability. Accordingly, it is inappropriate that ANSV reports should be used to assign fault or blame or determine liability, since neither the investigation nor the reporting process has been undertaken for that purpose.

This Preliminary Report is published to provide details of the initial facts. It contains facts which have been determined up to the time of issue and contains neither conclusions nor safety recommendations. It is published to inform the aviation industry and the public of the general circumstances of the accident and should be regarded as tentative and subject to alteration or correction if additional evidence becomes available. The investigation is continuing and a final report will be published in due course.

Aircraft Type and Registration	Boeing 737-400 HA-FAX.
Date & Time (UTC)[1]	5th of August 2016, 02.07'.
Location	LIME - Orio al Serio Airport.
Description of Occurrence	Runway excursion on landing.
Type of Flight	Commercial Air Transport (cargo).
Persons on Board	Crew (2).
Injuries	Crew: serious.
Nature of Damage	Aircraft: substantial. Aerodrome: minor.
Pilot in Command	Age 50 years, male. Airline Transport Pilot Licence (Aeroplane). Experience: 9787h 55' (of which 2254h 10' on type). Last 90 days: 79h 21' on type. Last 24 hours: 4h 13' on type.
Copilot	Age 29 years, male. Commercial Pilot Licence (Aeroplane). Experience: 343h (of which 86h 02' on type). Last 90 days: 86h 02' on type. Last 24 hours: 4h 13' on type.
Aircraft Information	Boeing 737-400, year built 1991, serial number 24437, MTOM[2] 68.038 kg.
Aerodrome Information	Location indicator LIME, elevation 782 feet.

[1] UTC: Universal Time Coordinated.
[2] MTOM: Maximum Take Off Mass.

RWY[3] 10/28: 2874 x 45 m, bituminous conglomerate.
RWY 12/30: 778 x 18 m, bituminous conglomerate.
LDA[4] RWY 28: 2741 m.
RESA[5] RWY 28: 150 x 90 m.
Approach and runway lighting RWY 28: PAPI[6], 3° wing bars both sides.

Weather Conditions

Latest weather report delivered by TWR[7]: visibility: 4000 m; wind: direction 280° (variable), speed 13 knots/maximum gust 23 knots; clouds: few clouds (1/8-2/8) 1700 feet, scattered CB (3/8-4/8) 3000 feet; temperature: 19 °C, dew point 17 °C; QNH: 1011.
Weather phenomena: heavy shower rain.
Metar: LIME 050150Z 26011G23KT 220V310 9999 VCTS FEW040CB BKN080 23/16 Q1010.

Narrative

The crew had flown two previous night sectors before a scheduled change of aircraft in Paris Charles de Gaulle airport (LFPG). The aircraft departed at 00.54' UTC for a 73 minutes flight to Bergamo Orio al Serio (LIME), where the crew was instructed by ATC[8] to perform an ILS[9] approach RWY 28. Once the crew reported fully established on ILS, TWR cleared the aircraft to land for RWY 28, providing latest weather information and runway condition wet. Last TWR communication reported wind 310 degrees 15 knots.
The aircraft touched down at approximately 2000 meters from the threshold RWY 28 and during deceleration broke through the localizer antennas and the airport fence. The landing gear and both engines separated from the main body and the aircraft came to a complete rest at about 520 meters beyond the runway end. The crew deployed the emergency slide and evacuated the aircraft using the right front door. They were assisted by the medical team and carried to the hospital for further treatment. Firefighting rescue team reached the accident site within three minutes from the emergency call.
The ANSV had immediate access to the flight recorders and their contents. In particular, it was possible to retrieve the CVR[10] and DFDR[11] data. A recording of the radio transmission and ATC ground radar track was also sourced. Furthermore, a sequence of approximately 26 seconds has been recorded by the security cameras positioned in the apron area, showing aircraft touch down and runway overrun. Interviews have been carried out by

[3] RWY: Runway.
[4] LDA: Landing Distance Available.
[5] RESA: Runway End Safety Area.
[6] PAPI: Precision Approach Path Indicator.
[7] TWR: Aerodrome Control Tower.
[8] ATC: Air Traffic Control.
[9] ILS: Instrument Landing System.
[10] CVR: Cockpit Voice Recorder.
[11] DFDR: Digital Flight Data Recorder.

the ANSV investigators to TWR and apron handling personnel who eye witnessed the event.
The analysis of the above mentioned sources highlighted that over the threshold RWY 28 the aircraft was at 140 feet AGL[12] and 156 knots. During flare, the aircraft floated for approximately 14 seconds between 30 feet and 20 feet, maintaining a constant airspeed close to 155 knots before touching down. The approximately 750 meters of the remaining runway did not allow to stop the aircraft, which trespassed the airport fence at approximately 109 knots. The DFDR last recorded speed was 91 knots.

Further Investigation

The ANSV safety investigation continues exploring:

- environmental and perceptual factors;
- organizational/management factors;
- flight crew training;
- flight crew rest/duty time;
- other human factors that might be relevant to the accident.

Picture 1: the accident site (aerial view from Carabinieri Corps).

[12] AGL: Above Ground Level.

Picture 2: aircraft damage.

Picture 3: aircraft damage.

Picture 4: aircraft recovery operations.