

AAIB Bulletin S2/2015

SPECIAL

ACCIDENT

Aircraft Type and Registration:	Embraer EMB-505 Phenom 300, HZ-IBN	
No & Type of Engines:	2 x Pratt & Whitney Canada PW535E turbofans	
Year of Manufacture:	2010 (Serial no: 50500040)	
Location	Blackbushe Airport, Hampshire	
Date & Time (UTC):	31 July 2015 at 1408 hrs	
Type of Flight:	Private	
Persons on Board:	Crew - 1	Passengers - 3
Injuries:	Crew - 1 (Fatal)	Passengers - 3 (Fatal)
Nature of Damage:	Aircraft destroyed	
Commander's Licence:	Airline Transport Pilot's Licence	
Commander's Age:	57 years	
Flying experience:	11,000 hours (of which 1,180 were on type) Last 90 days - 23 hours Last 28 days - 5 hours	
Information Source:	AAIB Field Investigation	

The investigation

The AAIB was notified of the accident at 1415 hrs UTC on Friday 31 July 2015 and immediately initiated a Field Investigation. This Special Bulletin is published to provide preliminary information gathered from ground inspection, the Combined Voice and Flight Data Recorder (CVFDR), and other sources.

This Special Bulletin contains facts which have been determined up to the time of issue. It is published to inform the aviation industry and the public of the general circumstances of accidents and serious incidents and should be regarded as tentative and subject to alteration or correction if additional evidence becomes available.

Preliminary information

The aircraft (Figure 1) was on a private IFR flight from Milan, Italy, to Blackbushe, with the commander and three passengers on board. Following descent from its cruise level, it was handed over from controllers at London Control to Farnborough Approach. They provided a radar service to the aircraft, before instructing the pilot to contact Blackbushe Information, a few miles prior to its entry into the Blackbushe Aerodrome Traffic Zone. The weather at Blackbushe was fine with light and variable winds, visibility in excess of ten kilometres, and no low cloud.



Figure 1

HZ-IBN on approach to Runway 25 shortly before the accident
(photograph taken by Geoff Pierce)

HZ-IBN entered the left-hand circuit for Runway 25 via the crosswind leg. Towards the end of the downwind leg, it overtook a microlight aircraft, before climbing slightly to pass ahead of and above that aircraft. As this climb began, at approximately 1,000 ft above aerodrome level (aal), a TCAS 'descend' Resolution Advisory (RA) was presented to the pilot of HZ-IBN, to resolve a conflict with the microlight. The TCAS RA changed to 'maintain vertical speed' and then 'adjust vertical speed', but these instructions may have been to resolve a second conflict with another aircraft which was above HZ-IBN, to the east of the aerodrome. Following this climb, HZ-IBN then descended at up to 3,000 feet per minute towards the threshold of Runway 25. The aircraft's TCAS annunciated 'clear of conflict' when HZ-IBN was 1.1 nm from the runway threshold, at 1,200 ft aal at a speed of 146 KIAS, with the landing gear down and flap 3 selected.

The operator estimated that the landing weight was 6,522 kg. The aircraft manufacturer calculated that at this weight the target threshold speed was 108 KIAS.

The aircraft continued its approach at approximately 150 KIAS. Between 1,200 and 500 ft aal the rate of descent averaged approximately 3,000 fpm, and at 500 ft aal was 2,500 fpm. The aircraft's TAWS generated six 'pull up' warnings on final approach. The aircraft crossed the threshold of Runway 25 at approximately 50 ft aal at 150 KIAS.

Tyre marks made by the aircraft at touchdown indicated that it landed approximately 710 m beyond the Runway 25 threshold. Runway 25 has a declared Landing Distance Available (LDA) of 1,059 m; therefore the aircraft touched down approximately 349 m before the end of the declared LDA, 438 m before the end of the paved runway surface.

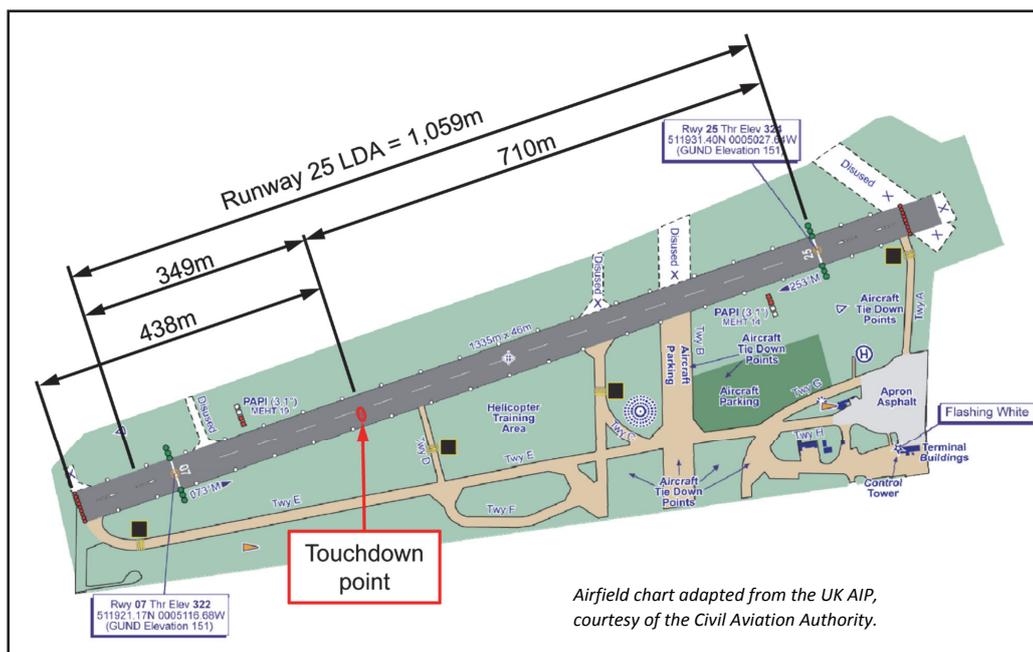


Figure 2

Blackbushe aerodrome chart, showing LDA and approximate touchdown point

Data from the aircraft's CVFDR indicated that the groundspeed at touchdown was 135 kt and the airspeed was 134 KIAS. The aircraft manufacturer estimated that at this speed the landing ground roll required to stop the aircraft would be at least 616 m¹.

Accident site

The aircraft departed the paved surface at the end of Runway 25 approximately three metres to the left of the extended runway centreline. It then collided with a one metre high earth bank causing the lower section of the nose landing gear and the nose gear doors to detach. The aircraft became airborne again briefly, before colliding with several cars parked at an adjacent business and coming to rest approximately 70 metres beyond the earth bank. The aircraft's wing detached from the fuselage during the impact sequence

Footnote

¹ The manufacturer commented that its calculation was based on a maximum performance landing, as performed in flight tests.

and an intense fire developed shortly thereafter, consuming the majority of the aircraft. The aerodrome rescue and firefighting service attended the scene, followed by local emergency services. The four occupants were fatally injured.

Further investigation

The aircraft wreckage has been taken to the AAIB facility at Farnborough and the investigation continues with the assistance of representatives of the State of the Manufacturer and the State of the Operator of the aircraft. A final report will be published in due course.

Published 6 August 2015

AAIB investigations are conducted in accordance with Annex 13 to the ICAO Convention on International Civil Aviation, EU Regulation No 996/2010 and The Civil Aviation (Investigation of Air Accidents and Incidents) Regulations 1996.

The sole objective of the 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 AAIB 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.

Extracts may be published without specific permission providing that the source is duly acknowledged, the material is reproduced accurately and is not used in a derogatory manner or in a misleading context.
