

SERIOUS INCIDENT

Aircraft Type and Registration:	1) Piaggio P.180 Avanti II, PH-DLN 2) Avro 146-RJ85, EI-RJW
No & Type of Engines:	1) 2 Pratt & Whitney PT6-66B turboprop engines 2) 4 Lycoming LF507-1F turbofan engines
Year of Manufacture:	1) 2008 (Serial no: 1175) 2) 2000 (Serial no: E2371)
Date & Time (UTC):	26 April 2012 at 1750 hrs
Location:	Near London City Airport
Type of Flight:	1) Commercial Air Transport (Passenger) 2) Commercial Air Transport (Passenger)
Persons on Board:	1) Crew - 2 Passengers - 4 2) Crew - 4 Passengers - 86
Injuries:	1) Crew - None Passengers - None 2) Crew - None Passengers - None
Nature of Damage:	1) None 2) None
Commander's Licence:	1) Commercial Pilot's Licence 2) Airline Transport Pilot's Licence
Commander's Age:	1) 47 years 2) 40 years
Commander's Flying Experience:	1) 2,088 hours (of which 1,072 were on type) Last 90 days - 50 hours Last 28 days - 17 hours 2) 6,800 hours (of which 6,500 were on type) Last 90 days - 91 hours Last 28 days - 33 hours
Information Source:	Aircraft Accident Report Forms submitted by the pilots, investigation report and documentation from National Air Traffic Services

Synopsis

The Piaggio P.180 deviated from its approved departure routing and flew into conflict with the RJ85 which was on approach to land. The ATC controller intervened to turn the Piaggio away from the RJ85, after which it became apparent that an operational error by the

Piaggio crew had led to erroneous heading indications on their cockpit displays.

History of the flights

Runway 27 was in use at London City Airport. There was a strong south-westerly wind, with good visibility and scattered cloud at about 3,000 ft. The Piaggio P.180 (PH-DLN) had just taken off and had turned right in accordance with its clearance when it flew into conflict with the RJ85 (EI-RJW) which was on final approach, following a flight from Dublin. Both aircraft were under a Radar Control Service.

The crew of PH-DLN reported on the Thames Radar frequency that they were climbing to 3,000 ft, about half a minute before the crew of EI-RJW reported established on the Runway 27 localiser. The crew of EI-RJW were instructed to establish on the glideslope and were transferred to the Tower controller. PH-DLN appeared to establish on an easterly track at 3,000 ft before the controller noticed it had turned onto a south-easterly track, towards the final approach path for Runway 27.

The controller instructed the crew of PH-DLN to turn left onto 030°. This was acknowledged but was apparently not complied with, so a further instruction to turn left was made using the phrase “AVOIDING ACTION” and with details of the conflicting traffic. At this point, EI-RJW was 3 miles ahead of PH-DLN, descending through 2,800 ft. The aircraft did not respond immediately so the avoiding action was reiterated. As PH-DLN began a left turn, the controller instructed its crew to climb to 4,000 ft.

The controller suspected that PH-DLN had suffered a failure affecting navigation, so instructed the crew to turn left until advised. The crew complied with this instruction, together with the subsequent instruction to stop the turn, although the crew then reported their heading as northerly when in fact it was seen on radar

to be approximately 060°. The crew were informed of the discrepancy and advised to cross-check their instrumentation. After a short while the crew reported that their instrumentation had been reset. The aircraft was subsequently transferred to the next controlling sector. The crew of EI-RJW had heard ATC instructions being given to another aircraft, but were unaware of the situation as it had developed. No TCAS warnings were received by the crew of either aircraft.

The minimum separation between the aircraft was recorded on radar as 2.7 nm lateral and 700 ft vertical.

PH-DLN heading indications

Whilst at the holding point, the crew had selected Directional Gyro (DG)¹ mode for heading indications on their Horizontal Situation Indicator, and adjusted the indicated heading to match the runway QDM once lined up for takeoff. After takeoff, slaved mode was selected. The crew were occupied with flying the aircraft in turbulent conditions and did not recognise that a navigational error had occurred. After complying with the ATC instruction to turn left, the crew realised the indicated heading was in error by about 60°.

The pilot's report noted that the heading reference system should normally be kept in its slaved mode for normal operations, and DG mode only used in case of failure of the slaved system. The report identified an operational error and the distraction posed by turbulence as causal factors.

Previous occurrences

In October 2006 a Hawker 800XP aircraft experienced significant navigation problems after taking off from

Footnote

¹ The horizontal situation indicator (HSI) is normally slaved to the output of a magnetic flux valve. The directional gyro mode disconnects the HSI from the flux valve output.

London City Airport. An AAIB Field Investigation (report reference EW/C2006/10/10) revealed that several similar incidents had occurred previously. It was established that local magnetic anomalies in the area of the runway holding point could adversely affect cockpit heading indications and, in some cases,

lead to heading system failure indications. Six Safety Recommendations were made, concerning airport standards in respect of magnetic anomalies, published aeronautical information regarding the anomaly at London City Airport, and advice to aircraft operators using the Airport.