

SERIOUS INCIDENT

Aircraft Type and Registration:	ERJ 190-200 LR Embraer 195, G-FBEJ	
No & Type of Engines:	2 General Electric Co CF34-10E7 turbofan engines	
Year of Manufacture:	2007	
Date & Time (UTC):	27 June 2011 at 1835 hrs	
Location:	Southampton Airport	
Type of Flight:	Commercial Air Transport (Passenger)	
Persons on Board:	Crew - 5	Passengers - 24
Injuries:	Crew - None	Passengers - None
Nature of Damage:	Air conditioning pack failure	
Commander's Licence:	Airline Transport Pilot's Licence	
Commander's Age:	62 years	
Commander's Flying Experience:	15,500 hours (of which 371 were on type) Last 90 days - 131 hours Last 28 days - 55 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot and subsequent AAIB enquiries	

The aircraft had departed with a single air conditioning pack operating, as permitted by the Minimum Equipment List. When passing FL100, the flight crew noticed smoke and a strong sulphurous smell in the flight deck. They donned oxygen masks, declared a PAN and elected to return to Southampton. After approximately five minutes the smoke and smell had cleared and the aircraft landed without further incident.

It was subsequently identified that the operable pack had failed in flight. It was returned to the manufacturer for investigation. Strip inspection of the unit revealed

that the second stage turbine rotor had failed, resulting in seizure of the rotor. This is a known failure mode caused by a resonance condition in the second stage turbine. Service Bulletin SB 190-21-0029 was issued on 26 April 2010 to incorporate a modified turbine with more nozzle vanes to eliminate the damaging resonance. To date no modified packs have experienced a second stage rotor failure.

This pack had not been modified. As there is already a Service Bulletin in place to prevent such failures, no additional safety action is proposed.