

## Boeing 737-300, CS-TGP

<b>AAIB Bulletin No: 11/2004</b>	<b>Ref: EW/G2004/08/09</b>	<b>Category: 1.1</b>
<b>INCIDENT</b>		
<b>Aircraft Type and Registration:</b>	Boeing 737-300, CS-TGP	
<b>No &amp; Type of Engines:</b>	2 CFM56-3/B2 turbofan engines	
<b>Year of Manufacture:</b>	Not known	
<b>Date &amp; Time (UTC):</b>	10 August 2004 at 1054 hrs	
<b>Location:</b>	Jersey Airport, Channel Islands	
<b>Type of Flight:</b>	Public Transport (Passenger)	
<b>Persons on Board:</b>	Crew - 6	Passengers - 152
<b>Injuries:</b>	Crew - None	Passengers - None
<b>Nature of Damage:</b>	None	
<b>Commander's Licence:</b>	Airline Transport Pilot's Licence	
<b>Commander's Age:</b>	52 years	
<b>Commander's Flying Experience:</b>	8,000 hours (of which 2,500 were on type)	
	Last 90 days - 180 hours	
	Last 28 days - 60 hours	
<b>Information Source:</b>	Airport report and enquiries by the AAIB	

The crew were operating a flight from Jersey Airport to Funchal Airport in the Madeira Islands. Prior to departure, the commander had liaised with the load controller and provided him with a Regulated Take-Off Weight (RTOW) of 57,600 kg, restricted by 'Field Length Requirement'. With the planned take-off fuel load of 11,000 kg, this required 15 bags to be removed from the aircraft to bring the weight within limits. The final load sheet indicated an actual take-off weight of 57,591 kg.

After takeoff, which the flight crew considered uneventful, various ground personnel at Jersey Airport reported that the aircraft appeared to use almost all the runway for takeoff. Subsequent enquiries by the AAIB revealed that the ATC assistant on duty at the time considered that the aircraft appeared to rotate very late and used most of the runway for takeoff. However, the controller stated that the takeoff did not cause him concern. Nevertheless, the AAIB made further enquiries with the operating company to resolve the differing views. The company provided copies of the documentation used by the crew for takeoff.

Runway 27 was in use with the 1020 hrs METAR showing a surface wind of 190°/ 10 kt, visibility greater than 10 km, cloud FEW at 1,500 feet amsl, temperature of 21° C and QNH 1009 mb. The company take-off card used by the crew showed minor differences including a surface wind of 180°/ 07 kt, temperature of 20° C and a QNH of 1008 mb. The crew had used the Jersey Runway 27

Flap 15 'Bleeds Automatic' performance sheet to extract the RTOW of 57,600 kg. This figure was based on 20° C but on a headwind component of 10 kt and did not take account of the QNH. Using the same sheet, the AAIB made a calculation based on the company take-off card figures and with zero head wind. This resulted in a RTOW of 56,184 kg. The crew subsequently stated that the take-off fuel figure was actually 10,600 kg. Nevertheless, this still resulted in a take-off weight of 57,191 kg against a RTOW of 56,184 kg. The situation was then compounded when the crew consulted the Quick Reference Handbook (QRH) for the appropriate take-off speeds. The take-off card showed that the crew recorded the figures as follows:  $V_1$  was 138 kt,  $V_r$  was 142 kt and  $V_2$  was 150 kt. However these figures had been taken from the Flap 5 configuration; the correct figures for Flap 15 were some 10 kt lower. The result was that, for takeoff, the aircraft was 993 kg heavier than the RTOW and the crew initiated rotation later than required.

Following the incident, the company has re-emphasised to all flight crew the importance of accurate take-off performance calculations and to ensure that it is done in accordance with JAROPS 1 and with the company Operations Manual. The importance of independent checks of performance calculations by both flight crew on the aircraft was also highlighted. Additionally, the company has re-emphasised to their crews to use refuelling stops when required, particularly on critical sectors such as Jersey to Funchal.

Since this incident a Ramp Inspection, carried out on the same operator/aircraft type before another flight from Jersey to Funchal, revealed discrepancies in the loadsheet data, which necessitated some 26 bags (around 500 kg) be offloaded. As a result, the airport authorities at Jersey have written to the operator expressing their concern and advising them that they will be monitoring their operation in the future.