



Ref: 0263

**SOUTH AFRICAN CIVIL AVIATION AUTHORITY****INCIDENT REPORT – EXECUTIVE SUMMARY**

<b>Aircraft Registration</b>	<b>ZS-SAJ</b>	<b>Date of Incident</b>	11-03-2003	<b>Time of Incident</b>	0853Z
<b>Type of Aircraft</b>	BOEING B747-300		<b>Type of Operation</b>		International Scheduled Flight
<b>Pilot-in-command License Type</b>	Transport Pilot's License	<b>Age</b>	56 Years	<b>License Valid</b>	Yes
<b>Pilot-in-command Flying Experience</b>	<b>Total Flying Hours</b>	20335.25	<b>Hours on Type</b>	5829.45	
<b>Last point of departure</b>	Johannesburg International Airport, South Africa				
<b>Next point of intended landing</b>	Sao Paulo, Brazil				

**Location of the incident site with reference to easily defined geographical points (GPS readings if possible)**

Johannesburg International Airport S26° 08' 01" E 028° 14' 32" at an elevation of 5558' AMSL.

<b>Meteorological Information</b>	The weather conditions were fine, the wind 070/06kt and the temperature 25 °C				
<b>No of people on board</b>	5+15+137	<b>No. of people injured</b>	Nil	<b>No. of people killed</b>	Nil

**Synopsis**

On 11 March 2003, the Boeing B747-300 was scheduled to depart on an International Scheduled Flight from Johannesburg International Airport to Sao Paulo, Argentina. The aircraft was initially delayed by the ATC due to only one ATC radar sector being in use.

However, during the Pre-Flight inspection, the Auxiliary Power Unit (APU) failed to provide sufficient airflow into the cockpit and cabin area as well as to start the engines. It was planned to use a ground air cart (Copco) to start an engine and then to cross-bleed start the other engines. There were several distractions on the flight deck and an expected 45-minute delay was reduced to 30 minutes when the ATC gave start clearance.

The flight engineer (FEO) obtained the load sheet, but entered the Zero Fuel Weight of 203 580 kg instead of the aircraft's, Take Off Weight of 324 456 kg into the hand held performance computer and then transferred the computed take-off speeds onto the take-off cards. The pilot-in-command checked the take-off speeds, as the first officer who normally does this, was busy and both pilots set up the relevant bugs on their airspeed indicators. The bugged speeds were thus not correct for take-off.

The pilot-in-command stated that during the take-off roll from Runway 03L with the engine power set at 1.42 EPR with 10° of flaps selected, the call to "ROTATE" was given at the speed set on the airspeed indicator. He then sensed that the aircraft felt nose heavy and delayed the rotation by 15 knots.

As the aircraft became airborne, the pilot-in-command requested more thrust as the aircraft still felt "sluggish" and at the same time, the flight engineer called "sinking". The pilot-in-command then kept the nose down in order to gain more speed. The aircraft climbed away at a positive rate of climb before the landing gear was retracted.

The ATC notified the pilot that a tail scrape had occurred during take-off and fuel was dumped before the aircraft landed back at Johannesburg International Airport.

The crew and passengers disembarked normally from the aircraft without any injuries.

**Probable Cause**

The FEO obtained the load sheet, but unintentionally entered the incorrect weight into the hand held performance computer and the computed take-off speeds onto the take-off cards. The computed take-off speeds were checked by the pilot-in-command and both pilots then set up the relevant bugs on their airspeed indicators that were in fact incorrect.

According to available information there were several distractions on the flight deck as well as an expected 45-minute delay by ATC that was suddenly reduced to 30 minutes when the ATC issued start clearance

