Ref: 0350

SOUTH AFRICAN CIVIL AVIATION AUTHORITY

INCIDENT REPORT – EXECUTIVE SUMMARY

Aircraft Registration	**ZS-PHJ**	**Date of Incident**	23 August 2004	**Time of Incident**	1500Z
Type of Aircraft	GULFSTREAM G159	**Type of Operation**	Test Flight		
Pilot-in-command License Type	ATPL	**Age**	23	**License Valid**	Yes
Pilot-in-command Flying Experience	Total Flying Hours	2 650.0		Hours on Type	± 300
Last point of departure	Kruger Mpumalanga International Airport (FAKN)				
Next point of intended landing	FAKN				
Location of the incident site with reference to easily defined geographical points (GPS readings if possible)					
Runway 05 - FAKN					
Meteorological Information	Fine: Wind - 060°/10kt, Temperature 25°C, CAVOK				
Number of people on board	3 + 0	**No. of people injured**	0	**No. of people killed**	0

Synopsis

Onboard the aircraft were three crew members. They were engaged in what they referred to as a maintenance flight. The flight originated at Lanseria Airport with an intended landing at Nelspruit Airport (FANS), which is their maintenance base. Prior to landing at FANS the pilot elected to land at FAKN to ensure the brakes were in good working order as they had been experiencing braking problems with the aircraft. On landing at FAKN the pilot had no brake authority with full brake application and no nose wheel steering. At an Indicated Airspeed of 40 knots normal brakes and nose wheel steering became available. Maintenance was carried out on the aircraft to address this issue and later during the day 3 test flights were conducted at FAKN with exactly the same effects. Maintenance again followed and a 4th test flight was carried out. On landing without any input from the crew the brakes would bind and release in ½ second intervals. The crew described it as maximum brake application followed none at all and it would repeat itself. The result was that all four main wheels locked-up, resulting in a blow-out of all four main wheel tyres on Runway 05. The incident resulted in the runway being closed for some time until all four main wheels were replaced and the aircraft could be taxied to a hangar.

According to an interview with the Chief Maintenance Engineer responsible for maintaining the aircraft, they could not identify any technical problem with the aircraft hydraulic system that could have caused or contributed to the event as described by the crew.
Following the event he obtained the services of an experienced test pilot who then flew the aircraft and found it to be serviceable.

Probable Cause

It would appear that the event was pilot induced (excessive braking after touch down to be able to vacate the runway at taxiway A, which is approximately 1200m from the threshold of Runway 05). No technical evidence could be found to substantiate the possibility of a hydraulic problem that could have caused or contributed to the event.