Piper PA-31 T1 Cheyenne 1 A, N817CT

AAIB Bulletin No: 2/98 Ref: EW/G97/12/01Category: 1.2

Aircraft Type and Registration:	Piper PA-31 T1 Cheyenne 1 A, N817CT
No & Type of Engines:	2 Pratt and Whitney PT6A-11 turboprop engines
Year of Manufacture:	1984
Date & Time (UTC):	2 December 1997 at 1753 hrs
Location:	Biggin Hill Airport, Kent
Type of Flight:	Private
Persons on Board:	Crew - 2 - Passengers - None
Injuries:	Crew - None - Passengers - N/A
Nature of Damage:	Left main gear collapsed and left powerplant damaged; right main gear bent; collateral damage to left wing and left elevator
Commander's Licence:	Private Pilot's Licence (German & USA) with USA Instrument Rating
Commander's Age:	36 years
Commander's Flying Experience:	412 hours (of which 150 were on type)
	Last 90 days - 42 hours
	Last 28 days - 14 hours
Information Source:	Aircraft Accident Report Form submitted by the pilot

Towards the completion of an IFR flight from Frankfurt the pilot,accompanied by a co-pilot who held a US ATPL(A), Instrument Ratingand Instructor Rating, obtained a METAR report for Biggin Hill.The report was: wind 350°/08 kt, visibility 1,500 metresin moderate snow, broken cloud at 200 feet, overcast cloud at300 feet, temperature +1°C, dew point -1°C and QNH1009 Hpa. Further difficulties were presented by 12 mm of wetsnow covering more than 50% of the runway area with poor brakingaction and no glidepath available for the ILS approach to Runway21.

Whilst considering the diversion options, the crew were informedthat an aircraft had just landed and reported the braking actionas poor, and that another aircraft was making an approach. ATCalso reported a cleared runway width of 15 metres either sideof the centreline with a shallow deposit of wet snow on the 'cleared'area.

Having calculated a crosswind component of 4 kt and tailwind componentof 6 kt, the crew determined that the required landing distancewithout additions was 1,250 feet. With a landing distance availableof 5,505 feet and ample fuel remaining the crew decided to attemptan ILS/DME approach to Runway 21 using 20° flaps. Theyplanned to use partial reverse thrust on the roll-out becauseof a reduction in directional stability associated with use offull reverse thrust.

The approach progressed well and the crew broke out of cloud atabout 500 feet agl. From that point onwards the runway was continuouslyin sight. At 100 feet agl the propellers were set to fully finepitch and the throttles were retarded to idle thrust. Touchdownoccurred at 90 KIAS on the centreline some 50 metres to 100 metresbeyond the threshold. Initially the landing roll proceeded normallybut after the full weight of the aircraft settled onto the landinggear, the aircraft's nose went to the left. The pilot appliedfull rudder, aileron, right wheel braking and some reverse pitchbut he was unable to correct the yaw to the left. As the aircraftreached the side of the runway it struck a snow bank which rotatedit further to the left. It departed the paved surface at a speedof about 20 kt to 30 kt but heading some 140° to the leftof the runway heading. The aircraft came to rest on a headingof about 050° a few metres to the left of the runway adjacentto the lengthwise mid-point. The crew secured the engines andthe rescue service arrived promptly but there were no injuriesand no need for emergency evacuation.

The pilot attributed the accident to a frozen left wheelbrake. The aircraft had departed Frankfurt in slushy conditions andthe soft touchdown on slush at Biggin Hill was insufficient tounfreeze the wheelbrake. However, the ATC controller who witnessedthe landing reported that the left main gear collapsed beforethe aircraft spun to the left and departed the runway.