No: 5/85	MICROLIGHT	Ref: EW/G84/08/20
Aircraft type and registration:	Ultrasports Panther G-MMTC (single engined microlight)	
Year of Manufacture:	1984	
Date and time (GMT):	26 August 1984 at 1530 hrs	
Location:	Truleigh Sands, Sussex	
Type of flight:	Private (pleasure)	
Persons on board:	Crew — 1	Passengers — 1
Injuries:	Crew — 1 (serious)	Passengers — None
Nature of damage:	Front forks, base tube and pitch limiter damaged	
Commander's Licence:	Private Pilot's Licence	
Commander's Age:	32 years	
Commander's total flying experience:	98 hours (of which 5 were on type)	
Information Source:	Aircraft Accident Report Form submitted by the pilot and UK Agents for Fuji Robin engines.	

The aircraft was being operated from a rectangular grass strip, bounded on its eastern edge by woods, but with the east west "runway area" extended into a cut-out in the woods. Because of the potential hazards in making an easterly take-off towards the woods, the pilot decided to take off in a westerly direction, beginning his ground run within the strip extension in the wooded area. The wind direction was 140°, giving a tail wind component, but the wind strength was negligible and the pilot considered that it would have little effect on his take-off roll, a view which was reinforced by the earlier successful landing of a crop spraying aircraft in the same direction as his intended take-off path.

A full power take off was made, with the aircraft being held initially at 5 to 10 ft agl to allow the speed to increase before a normal climb was initiated. At approximately 40 ft agl an instantaneous power loss was experienced, the pilot immediately lowered the nose to increase speed and the aircraft descended rapidly. The aircraft did not stall, and a successful flare and landing was accomplished, but the ground speed was too high to permit the pilot to stop or turn away from the boundary hedge (the aircraft was not fitted with wheel brakes). The aircraft entered the hedge and struck a tree stump, damaging the airframe. The passenger was uninjured, but the pilot suffered a cracked wrist.

The engine, which was a Fuji Robin model EC 442 PM (known as the 'lightweight' 440 cc engine) had failed as a result of a crankshaft fracture within the crankcase. The UK agents for Robin engines are aware of this failure, and of five other similar failures, all but one reportedly involving ultrasports aircraft. They have stated that the failures are caused by torsional fatigue fracture of the crankshaft between the rear bearing and flywheel, which is attributed to a resonant condition, possibly associated with over-revving and inappropriate engine mounting and reduction drive arrangements. It is believed that, with one exception, all of the failures occurred on aircraft which were designed to accommodate the original ('heavyweight') version of the Robin 440 engine, which has different power and torque characteristics, and consequently requires different propeller reduction drive arrangements in order to maintain the engine operating regime within acceptable limits. (The Robin EC 442 PM engine should not be operated at crankshaft speeds in excess of 6800 rpm). The other reported failure is believed to have been associated with propeller strikes which occurred at some time earlier in that particular engine's history.