Extra EA 300/L, (tailwheel type), G-XTRS

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Aircraft Type and Registration:	Extra EA 300/L, (tailwheel type), G-XTRS
No & Type of Engines:	1 Lycoming AEIO-540-L1B5 piston engine
Year of Manufacture:	1997
Date & Time (UTC):	23 April 1999 at 1802 hrs
Location:	Liverpool Airport
Type of Flight:	Private
Persons on Board:	Crew - 1 - Passengers - 1
Injuries:	Crew - None - Passengers - None
Nature of Damage:	Main landing gear and propeller blades destroyed. Further damage to engine panels, wing and aileron surfaces
Commander's Licence:	Private Pilot's Licence with IMC Rating
Commander's Age:	50 years
Commander's Flying Experience:	661 hours (of which 49 were on type)
	Last 90 days - 13 hours
	Last 28 days - 8 hours
Information Source:	Aircraft Accident Report Form submitted by the pilot and examination of fractured landing gear leg

The pilot was flying, with a passenger, from Inverness to Kemble, in formation with a Cessna 177RG. On reaching Wigan the weather ahead was worse than forecast and looked unsuitable for continued VFR flight, so the two pilots decided to divert to Liverpool Airport, where the runway in use was 09.

As the aircraft became visual with the airfield at Liverpool, the ATC controller offered a 'right base' approach to Runway 27, as the winds were light and variable. This was accepted and the Cessna approached first, with G-XTRS instructed to continue the approach and land after the Cessna had cleared the runway. The pilot of 'RS' noted that a light rain had started to fall but that visibility was still satisfactory and there was additional touchdown zone lighting on the runway, parallel to the centreline. He had set up the aeroplane with the normal approach speed of 80 kt and, after the Cessna had turned right onto the fast exit taxiway, he pulled the throttle to idle at a height of about

100 feet, reducing speed and holding the aircraft off the runway to allow it to settle in a 3-point attitude.

The pilot states that the stall warning began to sound at about 70 kt and that he was judging height by peripheral vision, as is usual in this aircraft with its lack of forward visibility in the flare. He thinks that the tailwheel may have touched the runway first and when the main landing gear made contact there was a loud 'thud', as if something solid had been hit. The left wingtip went down about a foot and the aircraft swerved abruptly 45° to the left. The pilot rapidly applied full right rudder and some right brake, holding the stick back and to the right to keep the left wing up. The aircraft continued in this attitude to the edge of the runway, where the main landing gear collapsed, the fuselage hit the ground and the propeller began to splinter. As the aircraft came to a halt the pilot was thrown forward in the straps and was quite dazed but he was able to open the canopy quickly and turned off the fuel and the electrics. The pilot and his passenger were both able to get out safely, with no further injury. The left-hand main wheel was found on the grass some 20 yards behind the aircraft and it was clear that the failure of the main landing gear had been initiated by the failure of the left leg.

The left leg was examined in detail by the AAIB and compared with the manufacturer's drawing. The main landing gear of the Extra 300 is a one-member structure, of composite construction, with attachment points to the two wheels and the underside of the fuselage. This single member is formed from 2 halves simply butt-joined by an adhesive bond, each half having 4 cells of foam surrounded by unidirectional fibreglass rovings and wrapped in fibreglass cloth. Examination indicated that the failure had propagated through the adhesive bonding material between these two halves because the load-sharing between the halves is dependent on the bonding material alone.

The pilot comments that he may have been distracted by the runway lights, being of a type with which he was not familiar, and that he was trying to avoid landing near them. The lights may thus have given him a distorted view as to his height above the runway surface, leading to a heavy landing. He further questions whether the landing gear is, in fact, strong enough for this aircraft.