Christen Eagle II, G-EEGL

AAIB Bulletin No: 4/2004	Ref: EW/C2003/11/10	Category: 1.3
Aircraft Type and Registration:	Christen Eagle II, G-EEGL	
No & Type of Engines:	1 Lycoming AEIO-360-A1D piston engine	
Year of Manufacture:	1985	
Date & Time (UTC):	16 November 2003 at 1535 hrs	
Location:	Andrewsfield, Great Dunmow, Essex	
Type of Flight:	Private	
Persons on Board:	Crew - 2	Passengers - None
Injuries:	Crew - None	Passengers - N/A
Nature of Damage:	Substantial damage to propeller, landing gear and underside of left lower wing	
Commander's Licence:	Private Pilot's Licence	
Commander's Age:	47 years	
Commander's Flying Experience:	372 hours (of which 101 were on type)	
	Last 90 days - 31 hours	
	Last 28 days - 7 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot and examination of the aircraft by the AAIB	

The pilot reported that he had carried out a standard approach and landing on Runway 27, however, during the roll-out, at around 50 mph, the landing gear collapsed. The pilot commented that the runway surface was rutted.

Aircraft Examination

The aircraft fuselage has a tubular steel structure covered by fabric at the rear and aluminium alloy panels at the front. The main landing gear consists of a spring beam, which is bolted to the fuselage cross bar on the underside of the forward fuselage (see Figures 1 and 2). Stub axles, carrying the wheels, are attached to the spring beam ends.

Figure 1 - Damage to tubular steel structure around spring beam attachment

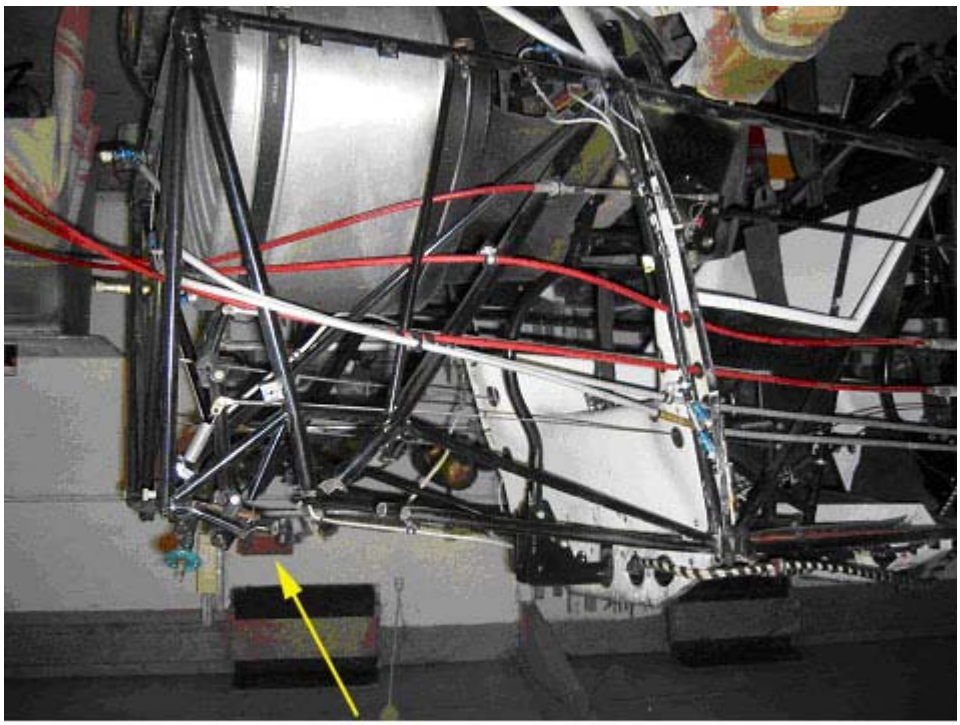

Figure 1 - Damage to tubular steel structure around spring beam attachment (cross bar removed)

Figure 2 - Landing gear arrangement

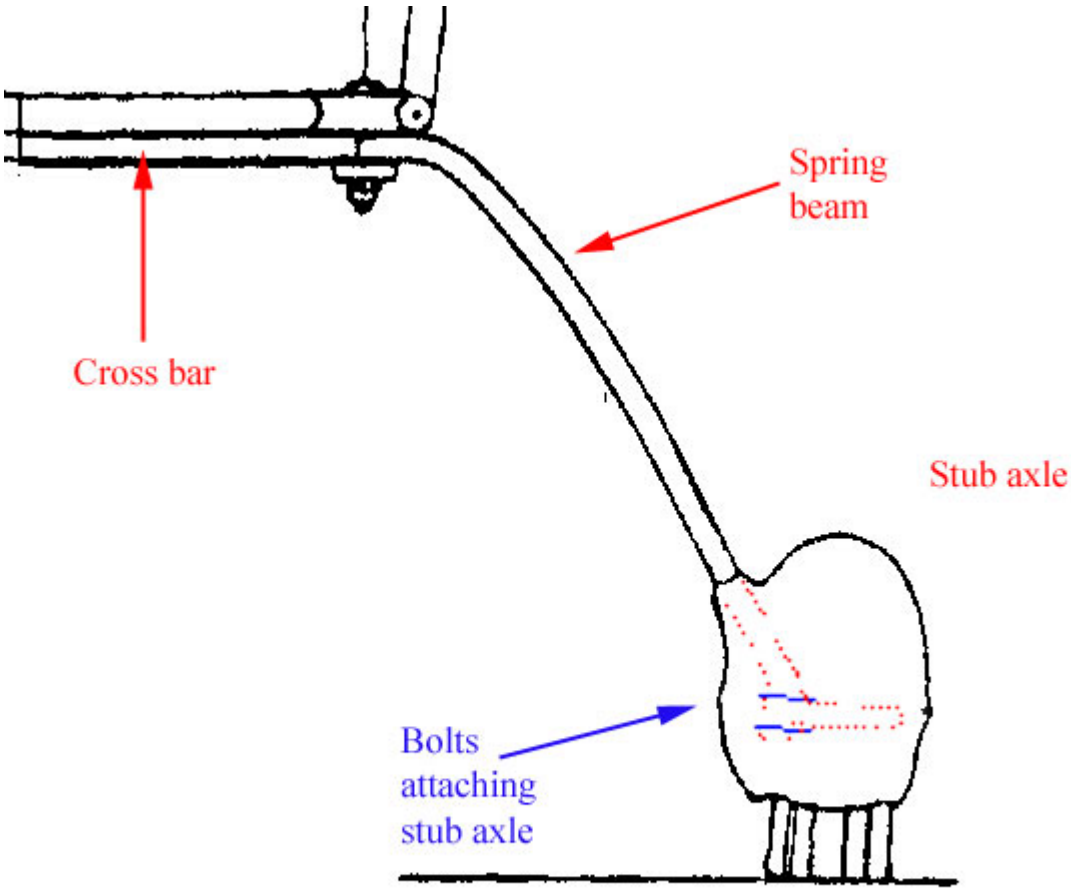

Figure 2 - Landing gear arrangement left side (viewed from front)

The aircraft was examined in conjunction with the repair agency, paying particular attention to the tubular structure in the area of the spring beam attachment bar. A number of the tubes and their welded attachments to the cross bar had failed due to overload in a vertical direction. It was noted that corrosion had occurred on some of the fractures and in the internal bores of the tubes. The four 'nyloc' nuts attaching the left stub axle to the spring beam had detached, stripping their threads, and the bolts had deformed as a result of a combination of rearwards and vertical loads.

Whilst the degree of plastic deformation indicated that the failures occurred due to overload, the presence of corrosion suggested the possibility of damage occurring on successive landings. However, some time had elapsed between the accident and the examination of the aircraft by the AAIB. Furthermore, no evidence of damage in this area was noted by the Popular Flying Association (PFA) Inspector when the aircraft was inspected for its Permit renewal in October 2003.