AAIB Bulletin No: 12/95 **Ref: EW/G95/09/09** **Category: 1.3**

Aircraft Type and Registration:	Rans S6-116 Coyote II, G-BVCL
No & Type of Engines:	1 Rotax 912-UL piston engine
Year of Manufacture:	1993
Date & Time (UTC):	11 September 1995 at 1300 hrs
Location:	Felixkirk Airfield, near Thirsk, Yorkshire
Type of Flight:	Private
Persons on Board:	Crew - 1 Passengers - 1
Injuries:	Crew - None Passengers - None
Nature of Damage:	Broken propeller, nose landing gear, engine cowling and right main gear
Commander's Licence:	Commercial Pilot's Licence with Instrument and Instructor Ratings
Commander's Age:	31 years
Commander's Flying Experience:	1,960 hours (of which 16 were on type) Last 90 days - 296 hours Last 28 days - 103 hours
Information Source:	Aircraft Accident Report Form submitted by the pilot

The Rans S6 is a 'homebuild' aircraft assembled from a kit produced in the USA. The -116 variant is a clipped wing version with slightly higher cruise and stalling speeds than the microlight version. It can be configured for either nose or tailwheel; G-BVCL had a nosewheel and a Permit to Fly issued by the PFA (Popular Flying Association) authorising a maximum all-up weight of 1,100 lb.

The joint owners of G-BVCL purchased it privately from a person who was not the constructor. Using this aircraft they intended converting their PPL(D) licences to PPL(A) and subsequently operating the aircraft from a private strip which was quite short (about 300 metres). Whilst undergoing training with their instructor on G-BVCL, they formed the opinion that its performance and handling qualities were inferior to other examples of the type and they decided to have the aircraft examined by the UK kit distributor's expert.

One of the co-owners together with the instructor flew the aircraft to the UK distributor's strip for the examination; this flight was uneventful. At Felixkirk the aircraft was examined and then test flown by

the expert. He stalled the aircraft in the clean configuration with two people on board and recalled that the stall speed was 50 mph which was about 2 mph more than normal. After the flight he pronounced that there was nothing wrong with the aircraft apart from slight misrigging of the ailerons and flaps. The surfaces were re-rigged by about 2° to 3° to remove unwanted upfloat and the requisite inspections and paperwork were completed. A second test flight was not flown before the owner and his instructor boarded the aircraft to return home.

On departure from Felixkirk the AUW of the aircraft was 1,024 lb. The strip is 500 metres long and the headwind component was about 2 kt. The pilot reported that the takeoff appeared normal up to the point of lift-off which was half way down the runway. The aircraft left the ground but although the airspeed appeared normal, the aircraft wallowed. The nose was lowered to increase airspeed and the aircraft bounced before starting to climb. It cleared the four foot high fence at the end of the strip but it was still not climbing or accelerating normally. There was a large tree ahead of the aircraft which the pilot judged he could not avoid so he closed the throttle and landed ahead. The aircraft yawed and rolled right on closing the throttle and landed on its right main gear which collapsed. The nosewheel also collapsed and the propeller broke on contact with the ground. The aircraft came to rest erect and both pilots vacated it from the left-hand side.

One witness stated that, during the early part of the take-off run, no attempt was made to raise the nosewheel clear of the grass and therefore the aircraft did not accelerate well. The grass at Felixkirk was about five inches long and wet. The CAA's General Aviation Safety Sense Leaflet No 7 on Aeroplane Performance states that takeoff from long wet grass increases the distance required to attain 50 feet height by some 30%.