Tri-Q 200 Quickie, G-BUBC

AAIB Bulletin No: 6/2002	**Ref: EW/G2002/02/10**	**Category: 1.3**
Aircraft Type and Registration:	Tri-Q 200 Quickie, G-BUBC	
No & Type of Engines:	1 Continental O-200-A piston engine	
Year of Manufacture:	1993	
Date & Time (UTC):	16 February 2002 at 1215 hrs	
Location:	Sturgate Aerodrome, Lincolnshire	
Type of Flight:	Private	
Persons on Board:	Crew - 1	Passengers - 1
Injuries:	Crew - Minor	Passengers - Minor
Nature of Damage:	Extensive to aircraft	
Commander's Licence:	Private Pilot's Licence	
Commander's Age:	73 years	
Commander's Flying Experience:	618 hours (of which 450 were on type)	
	Last 90 days - 6 hours	
	Last 28 days - 3 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot and further enquiries by AAIB	

The aircraft was taking off from Runway 27 with two people on board (POB). It accelerated normally with full throttle applied. Between 70 and 80 mph, the pilot reported that the aircraft pitched up, became airborne and dropped its right wing. The right canard tip scraped along the runway and corrective aileron was applied. The aircraft was then observed to pitch rapidly to a high nose attitude. Having recovered from a bank to the right, it flew level with its wings rocking. Because of the unusual feel of the aircraft, the pilot lowered the nose and the aircraft descended into a field of winter corn, beyond the airfield perimeter. The throttle was closed shortly before impact. The aircraft landed on its main wheels then on the nose wheel. The nose landing gear collapsed and the aircraft somersaulted over its nose, then came to rest the right way up. Both occupants vacated the aircraft through the open canopy having suffered only minor injuries. The airfield rescue and fire fighting services attended the scene but there was no fire. The pilot was of the opinion that the four point harnesses had prevented more serious injuries. The aircraft suffered substantial damage, particularly to the fuselage, tail, port canard, main wing, and nose.

The surface wind at the time of the accident was from 230° at 3 kt. Under a clear sky, the visibility was 4,000 metres in haze. The temperature was 10°C and the asphalt runway was dry.

The pilot often flew solo and normally took off with the elevator and aileron reflexor trims in the neutral setting. For this flight, with two POB, the trim positions were not altered. However, after the accident, the aileron reflexor trim was found to be towards the fully aft position. Whether this change occurred before or after impact could not be determined.

Aft aileron reflexor trim would have had an effect on the lift distribution between the main wing and canard, inducing a pitch up tendency. However, sufficient elevator authority should have remained to control the aircraft in pitch. The pilot normally expected the aircraft to take off at 85 mph when operating at its maximum permitted takeoff weight. On this occasion, he was surprised when it rotated at less than 80 mph.

The inclusion of a passenger in the right seat would have moved the centre of gravity to the right, which could have accounted for the right wing drop during the takeoff.

The most recent flight test recorded the aircraft as 'pitch bucking' at 68 mph at a similar weight. The pilot commented that the 'pitch buck' was not well defined. It is possible that the aircraft was close to this speed when flying in a nose high attitude after takeoff.

Up to the point when the pilot closed the throttle, all indications were that the engine was producing full power.

While there is no conclusive cause for this accident, the factors described above may all have contributed to the behaviour of the aircraft, which appears to have been at a lower airspeed than was usual for takeoff and initial climb.